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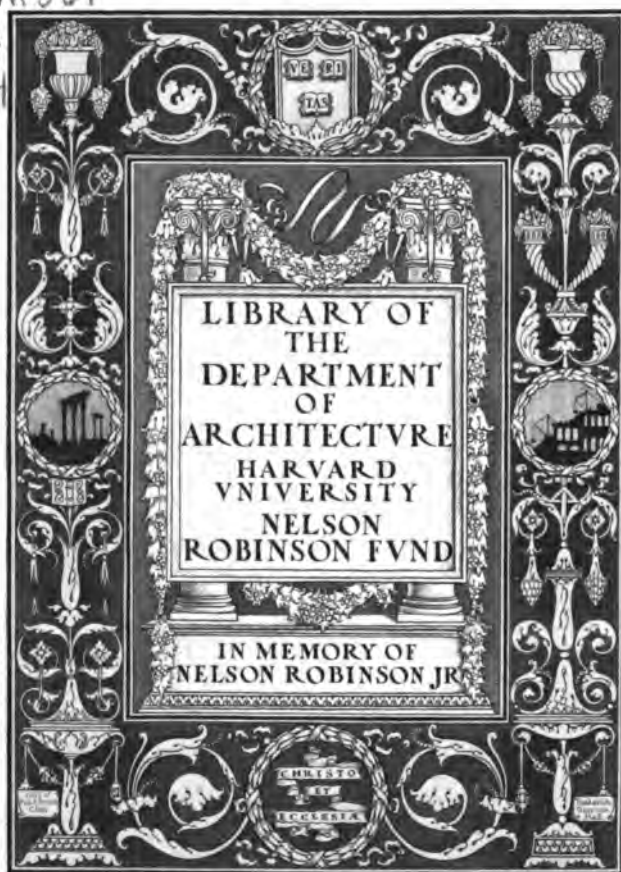
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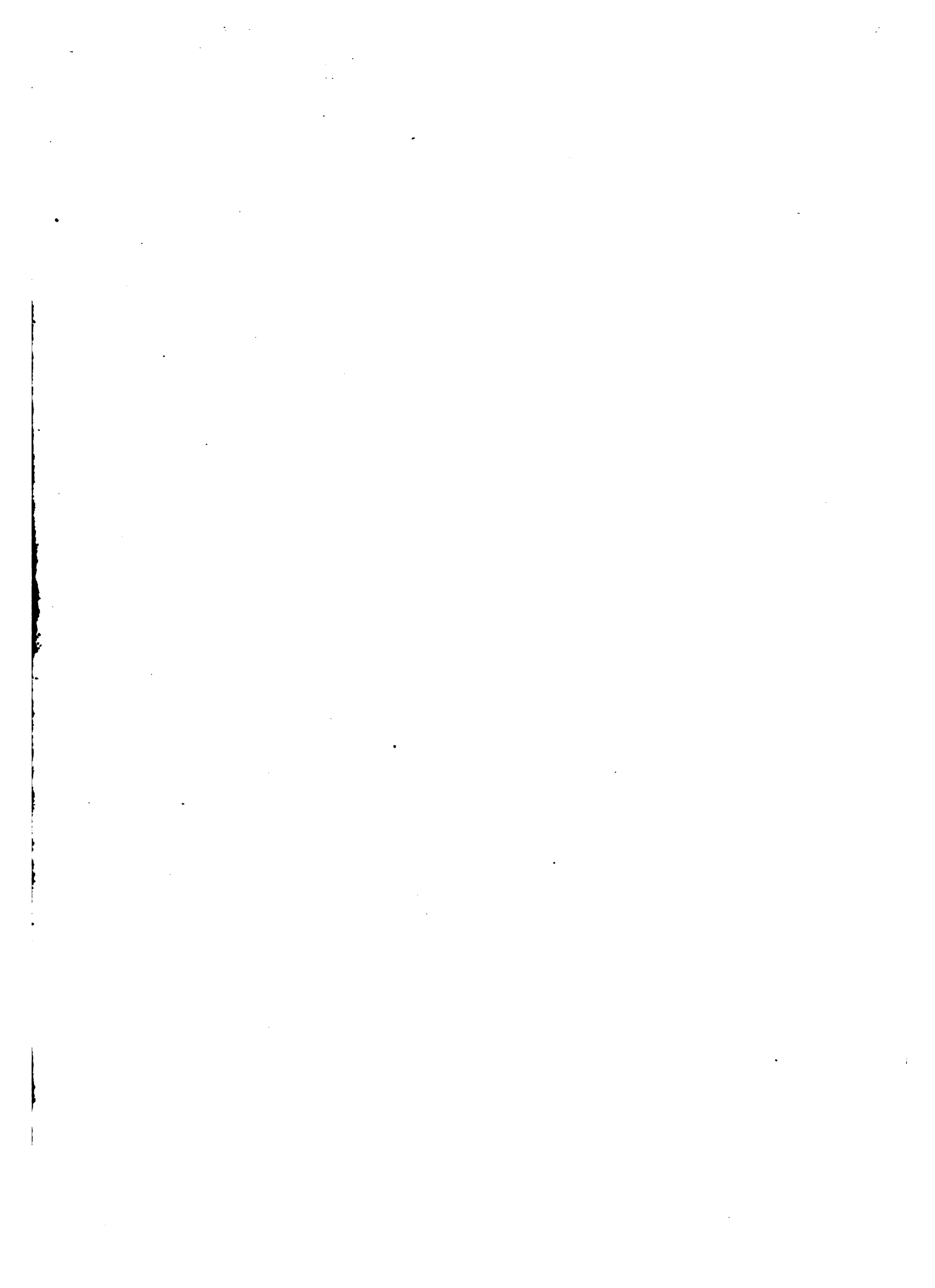
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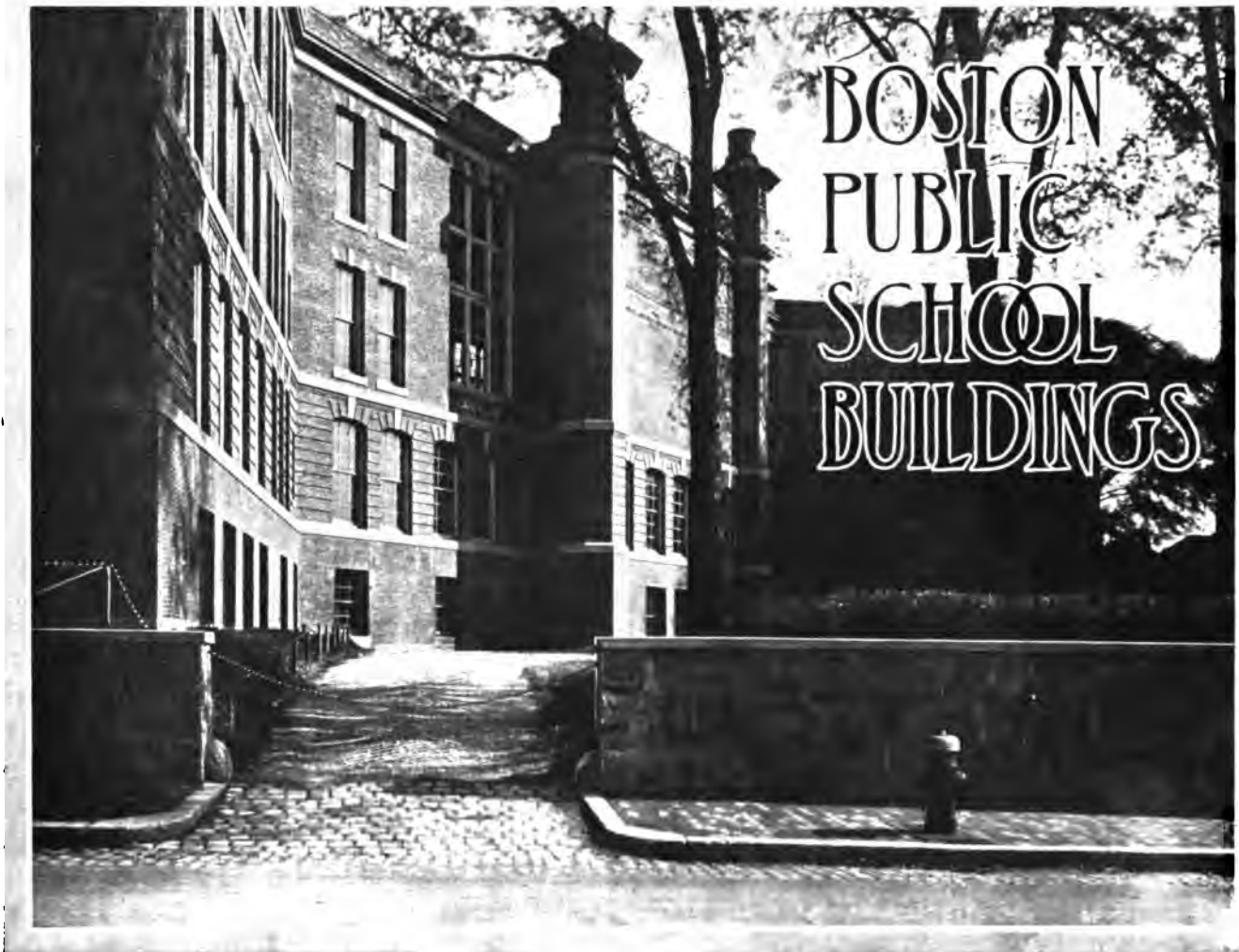
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BUILDING NEWS

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SATURDAY, JANUARY 4, 1908.

No. 1671.



UNLIKE St. Louis, Chicago, New York and some other cities, the Boston School Department does not have an official architect, to prepare designs for its school-houses. Until the arguments of Mr. E. M. Wheelwright succeeded in inducing the mayor to abolish the office of City Architect, which Mr. Wheelwright had ably filled for several years, the incumbent of that office prepared the designs for and superintended the construction of all the public buildings erected by the municipality and, amongst these, school-houses required more of his care and attention than any others, so that the School Department was almost as well served as if it had its own special architect.

Naturally, the general body of architects in Boston were pleased with the abolition of the official City Architect, for the step seemed to promise to open to them a field that for years had been closed against them; and,

no doubt, a marked improvement in the architectural expression of Boston's public buildings was anticipated.

After a period of doubt and experimentation, it was perceived that, however it might be with bath-houses, police-stations and engine-houses, the well-being of the community was too vitally concerned in school-houses to leave them at the risk of fickle chance and political pull an instant longer than was needful. Consequently, about half a dozen years ago, there was established the School-house Department—which must not be confused with the Department of Schools, which has charge of the use of the buildings after they are built and of the education and well-being of the pupils—under the charge of three Commissioners, of whom Mr. R. Clipston Sturgis has, from the outset, been the chairman. This new Department has entire charge of the erection of new buildings and the selection of the architects who shall design them. It, to a con-

considerable degree, interposes itself as a buffer between the private architect accustomed to a quiet life and the pressure of politicians. In a very great degree it substitutes itself as the real client of the private architect, who has to satisfy its requirements rather than those of the City Government proper. On their appointment Mr. Sturgis



THE REAR OF THE MATHER SCHOOL, DORCHESTER, MASS.

and his colleagues set about making a comprehensive study of the school-house question for the last seventy-five years and, having searched records, examined contracts, drawings and specifications without number, they have, after duly digesting the material, produced a series of valuable annual reports that are classics in their way.

The mode of action under the Boston plan is about as follows: The School-house Department, being instructed by the School Committee, that a new building is needed, studies the requirements, searches for and advises as to the site, recommends the amount it is desirable to spend and procures the appropriation. Then, having carefully prepared a statement of the requirements, it selects from the general body of private practitioners one who seems likely to handle the work satisfactorily and then leaves the selected architect free to prepare his design and specification, subject always to the correction and final approval of the Commission itself. In this way it has been possible to fix and determine certain standards of arrangement and equipment and then, by careful watching, to discover how and where they may be improved. In other words, the Commission stands responsible for the skeleton, as it were, while the designing architect has to do only with the fleshings. In a general way work has been assigned to private architects after a species of rough and ready rotation; no firm as yet, we believe, has had the designing of more than two school-houses, the intention seeming to be to give any capable man a chance if he cares to avail of it. It is plain, then, that these new school-houses must have a considerable variety of architectural expression, and it is equally plain that they would be likely to have quite as great variety in arrangement, accommodation and equipment but for the fact that these matters lie in the control of the Commission, and herein lies the safety of the present scheme.

The scheme as a whole is well devised and it has been in operation long enough to produce a body of results that enable the observer to form an opinion as to the success of the experiment. One thing is very apparent, the Scylla of sameness has certainly been avoided, but it is not so certain that Charybdis has been escaped. There is variety of treatment and, taken individually, the treatment is gen-

erally good and satisfying, but when one comes upon a particularly good piece of work it is impossible to avoid wishing that the next job might have been given into the same hands.

We believe, however, that Boston architects generally are disposed to consider the method successful and have found themselves greatly assisted rather than hampered by the systematic methods devised by the Commission. And from a pecuniary point of view the result to them is satisfactory, for the Commission divides the work into two parts, leaving it to the architect to design and construct the building, while reserving to itself the control and oversight of all that goes to constitute the "domestic engineering" of the building—the heating, lighting, sanitation and equipment. Upon the cost of gross construction the architect is paid 5 per cent., while upon the cost of the domestic engineering, material and labor he receives but two and one-half per cent., the Commission reserving an equal amount to cover the cost of preparing in its own office the drawings and specifications that these important elements call for.

How far the present method is found satisfactory from a purely financial point of view, we do not precisely know.

It will have been noticed in the account of the St. Louis school-houses published a few weeks ago in this journal



GIRLS' ENTRANCE, MATHER SCHOOL, DORCHESTER, MASS.

that the average cost per cubic foot for eight school-houses erected within the last three years was set down at 17 1-2 cents, varying from 0.157 to 0.194. Now the average cost per cubic foot in Boston seems to be much nearer 23 cents than 17. Unfortunately, in the tabulation before us there is included but a single example of a

twenty-four-room building such as are all of the St. Louis examples, and here the cost was 24 cents, which implies a cost per pupil of \$146.32, as against an average cost per pupil in St. Louis of \$143.40. The Boston building was built during the same period and the market conditions were therefore the same, or at least as nearly the same as they ever can be in two widely separated places.

The Commissioners have under their charge 221 school-houses in occupancy and at the time of the issue of their last annual report there were five new school-houses building but unfinished. Very nearly one-half of these buildings were erected more than twenty-five years ago, the oldest building in use having been built in 1824, they have therefore, in most instances, no shadow of a right to be considered anything but dangerously combustible. In fact, the only school-houses of really fireproof construction are those recently erected by the present Commissioners, although all those built since the great conflagration of 1872 have had progressively incorporated in them fireproofing material and devices that accorded with the knowledge of their day on the science of fireproofing. Because of the age, hard use and neglect of so considerable a proportion of their charge, it is easy to see that the annual outlay for repairs must be large. In fact, the Commissioners, who do not have a regular stated annual appropriation, but have to depend on securing such sums as the Legislature is graciously willing to allow, have been seriously crippled in their building operations by the steady drain upon their funds which is occasioned by necessary, sometimes excessive, repairs. Once even, they were further embarrassed when the School Committee transferred away from their unexpended balance a considerable sum which was desired for increasing the salaries of teachers! Yet, in spite of this and in spite of the fact that such a policy must tend to increase the number of teachers—who, seemingly, must be paid and at a progressive rate—the Commissioners avow their belief

the newer school-houses have shown much ingenuity in adapting their plans so as to meet this stipulation. Their solutions of this problem are often very interesting and their treatment of the considerable areas of plain wall without door or window openings, which also result from this requirement, seems in most cases to be very satisfactory. At the same time the Commissioners admit that



O. W. HOLMES SCHOOL, SCHOOL STREET, DORCHESTER, MASS.



JEFFERSON SCHOOL, HEATH STREET, ROXBURY, MASS. SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS.

in the wisdom of building a number of school-houses of moderate size rather than a smaller number of the twenty-four or thirty-room school-houses common in other large cities.

The school authorities have adopted the system of unilateral lighting and the architects who have designed

circumstances may arise where, through the general unsuitability of a site affected by the position and height of neighboring buildings, bilateral lighting must be adopted in some of the rooms, if they are to have the minimum amount of illumination their use demands. But the admission of a sufficient amount of light is not the only consideration; regard must be had for its proper diffusion and more careful provision should be made to prevent its needless absorption. In other words, the surface finish of walls, ceilings and floors should be the best for their purpose and the color given to them should be determined by competent specialists. In this connection the studies on the reflecting efficiency of different colors made by Dr. Louis Bell and by him laid before the late convention of the Illuminating Engineering Society in a brief paper, which may be found in another column of this issue, should be found of much value to architects who have to advise as to the decorative treatment of school-rooms.

Of course, the great invariable light-absorber in school-rooms is the standard blackboard, whether of natural slate or an artificial coating applied to plaster or wood. Against the use of these blackboards Dr. C. H. Williams, the oculist who advises the school authorities and has devised and directs the methods used in the examinations of pupils' eyes now established by law, is waging war and hopes to bring about the substitution for them of light-colored surfaces upon which colored chalk can be used in place of white. We will go farther and point out that if, in place of colored chalks which would crumble into dust just as white chalks do, there should be used on these light-colored "blackboards" crayons compounded with

wax or grease a distinct hygienic gain would be made at the same time the diffusion of light was promoted. No small amount of the dust in school-rooms has its origin in the chalk used on the blackboard, and the less dust school-rooms contain the more surely will respiratory and pulmonary diseases be avoided.

In approaching their work, at the outset, the Commissioners perceived that not only their own work but that of the architects who would have to work under them would be greatly facilitated, if they could discover and fix standards which, as units, could be used over and over again, not only in different buildings but in compiling the arrangement and composition of a single building, and their attempts to "standardize" their requirements have been markedly successful.

Perhaps the most interesting "standard" they have fixed is that 22 cents per cubic foot is a fair and proper cost for a "first-class" school-house as defined by the Boston building-laws, and it must be understood that the Commissioners' attempts at standardizing have been both helped and hindered because of their having to conform them with the provisions of the general building-law.

In operation it has been found, in the case of the twenty-two buildings completed by the Commissioners, buildings which provide accommodation for 18,500 pupils, that in sixteen cases the standard cost has been exceeded, though in six of these cases by but a single cent per cubic foot. In another six cases the final cost was standard or less. The test of experience seems to show that the standard cost per cubic foot of "first-class" school-houses under the Boston building-law is 23 cents.

All school-houses are to be built of "common" brick, with or without stone finish, and the smaller buildings are to be relatively less ornate than the larger ones. Of course, there are exceptions to all rules, and it was decided to build the Charlestown High School-house of granite, a happy conclusion since, because of the similarity of material, it groups better with the shaft and office-building of Bunker Hill Monument standing in its park just opposite.

Further "standards" may be discerned in the "General Information for First-class Construction" that with certain diagrammatic illustrations of standard methods of fitting wardrobes, cooking-rooms, manual-training-rooms, lavatories and so on are republished with each annual *Report*. For instance, class-rooms in primary schools are to measure 24x30 feet, while in grammar schools they are to be 26x32 feet, 13 feet in the clear. Window glass, in small panes, is to equal in area one-fifth of the floor-space of the room lighted. Corridors in small buildings are to be 8 feet wide, or 10 feet in the larger buildings. General toilet-rooms, preferably in the basement, are to be provided on the girls' side with two water-closets per class-room, while on the boys' side one closet per class-room is allowed, but, in addition, slab urinals having a running length of 36 inches per class-room are to be provided. In addition to this equipment there is provided on each floor two so-called "emergency" water-closets, one for boys, one for girls.

It is quite impossible to give an adequate idea of the standardizing that has been developed in the department of domestic engineering unless by practically giving complete specifications for heating, ventilation, plumbing and artificial lighting, and this is obviously impossible here; even in skeleton form the statement of the standard re-

quirements consumes many pages in the Commissioners' *Reports*.

But in spite of the care with which the scheme has been worked out and after the thorough trial it has had, the Commissioners announce a qualified dissatisfaction with the present method of school building that they are obliged to administer. They announce their preference for extending their own control and now desire to have the architectural designing done in their own office just as already the domestic engineering is there looked after by the staff of engineers regularly in their employ. They would like to discover the right man for the place by examination and then put him and the other members of the force under the protection of the Civil Service laws. They propose the substitution of a single architect, an official one to be sure, who shall carry out the intentions of the Commissioners just as private architects now try to do. The Commissioners would still continue to be the final and controlling authority.

ILLUSTRATIONS

THE TUCKERMAN PRIMARY SCHOOL, FOURTH AND L STREETS, SOUTH BOSTON, MASS. MR. CHARLES K. CUMMINGS, ARCHITECT, BOSTON, MASS.

This ten-room building, to build which only eight months were allowed, was finished and occupied in September, 1905, at a total cost for the building itself of \$78,980.04, which is equivalent to a cost of 24 cents per cubic foot, or \$157.96 per pupil, the rated accommodation being for 500 pupils. The building is of brick with the sparsest relief of light stone dressings. Although the position itself is admirable, the site is trapezoidal in outline, but not enough in itself to suggest or compel the devising of the ingenious arrangement the architect has reached.

THE JOHN GREENLEAF WHITTIER SCHOOL, SOUTHERN AVENUE, DORCHESTER, MASS. MESSRS. PARKER & THOMAS, ARCHITECTS, BOSTON, MASS.

This ten-room school-house, intended for the occupancy of 500 primary-school children, was built in 1904-5 and, at a cubic foot cost of 24 cents, cost the city \$77,866. The cost per pupil therefore was \$155.73. It is interesting to note that the total of the contract price at the time the work was let was \$72,193. The increase in cost was due to divers causes, but the chief item of additional cost was \$2,150 for a vacuum cleaning plant not included in the original requirement.

THE CHRISTOPHER GIBSON SCHOOL-HOUSE, ELIOT STREET, DORCHESTER, MASS. MR. E. M. WHEELWRIGHT, CITY ARCHITECT, BOSTON, MASS.

This fourteen-room school-house, which was built in 1895, is introduced here with the newer buildings because it is an interesting example of Mr. Wheelwright's work. Moreover, its cost per cubic foot, 14 cents, serves to draw attention to the difference between the "first-class" building of the present day and the "fireproof" building as that article was understood so short a time ago as a dozen years. In spite of the low cost per cubic foot, the cost per pupil is \$158.61, the building accommodating only 700 pupils of the grammar grade.

THE JEFFERSON SCHOOL-HOUSE, HEATH STREET, ROXBURY, MASS. MESSRS. SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS, BOSTON, MASS.

This building, an oblong parallelogram in plan, is arranged, as shown in our issue for July 4, 1903, with a central corridor on the long axis running north and south. On either side of this corridor, the stairs being at each end, are arranged symmetrically four class-rooms, lighted, of course, from one side only. The building provides nineteen class-rooms, which accommodate 950 pupils at a cost per pupil of \$227.85, the total cost of the building being \$216,455.85. It follows naturally that the cost per

cubic foot has been high, three cents in fact higher than the "standard" price set by the School-house Commissioners.

[NOTE.—Lack of space prevents the publication of a large number of the new school-buildings, but those who are interested in the subject can find other school-houses illustrated in earlier issues of this journal, *e. g.*: "Washington Grammar," Everett & Mead, Architects, January 10, 1903; "South Boston High," H. D. Hale, Architect, February 21, 1903; "East Boston High," J. L. Faxon, Architect, May 2, 1903; "Jefferson," Shepley, Rutan & Coolidge, Architects, July 4, 1903; "Wm. Russell," J. Mulcahy, Architect, June 15, 1904; "Farragut," Wheelwright & Haven, Architects, July 6, 1904; "Ticknor," Andrews, Jaques & Rantoul, Architects, March 18, 1905; "Sarah J. Baker," Schweinfurth & Craig, Architects, August 12, 1905.]

THE MATHER SCHOOL-HOUSE, DORCHESTER, MASS. MESSRS. CRAM, GOODHUE & FERGUSON, ARCHITECTS, BOSTON, MASS.

The Mather School-house, a thirty-room building, is one of the largest and most costly of the buildings erected by the School-house Commission, for though the standard cost per cubic foot, 22 cents, has been observed, the cost per pupil, \$197.77, is high in view of the fact that the building provides accommodation for 1,500 pupils. The total cost of the building itself was \$296,655.

THE CHARLESTOWN HIGH-SCHOOL BUILDING, CHARLESTOWN, MASS. MESSRS. STICKNEY & AUSTIN, ARCHITECTS.

We are enabled, through the courtesy of the architects, to present some interesting notes, arrangement and equipment of this building.

The Charlestown High-school Building, Charlestown, Mass.

THE Charlestown High School building, which was completed in the late spring of 1907, is approximately one hundred and fifty feet in length by one hundred and seven feet in width and covers the entire lot which falls about twelve feet in its longest dimension. This inequality in levels has been so utilized as to obtain a five-story building above the lowest, and a three and one-half-story above the highest sidewalk. The exterior of the building is of cut granite throughout and the entire constructive features are first-class (*i. e.*, fireproof) in character.

The accommodation for pupils in this high school differs from that in any other high school in the city in this respect, that each individual pupil is assigned a locker in which the pupil's books are kept; and this is the only location in the building which is necessarily the property of any individual pupil. It follows that the capacity of the building is estimated by the number of these lockers that are provided, instead of by the number of desks in regular class-rooms. There have been provided three hundred and ninety-six of these lockers. There is opportunity for a much larger number of pupils to work in the school, on account of the large space for recitation and laboratory use; and if lockers were provided, it is undoubtedly true that nearly seven hundred pupils could be accommodated in the building. The number of pupils registered this year (1907) was over three hundred and fifty. Besides the various large and small class-rooms the building is provided with the following additional halls, rooms and laboratories:

1. Gymnasium, about 46 feet by 62 feet—with a gallery about 8 feet by 62 feet on one side, on the level of the first floor.
2. Dressing rooms adjoining the gymnasium, furnished with thirty separate dressing compartments, each provided with a seat and hooks for clothing and a door with a lock, of which the key is in the possession of the occupant for the time being.
3. An iron mesh screen is screwed over the top of each compartment.
4. Showers, bowls and w.c. adjoining the dressing room.
5. Office of the Physical Director connecting directly with the gymnasium and with the dressing room.
6. Locker room in which the pupils' exercise clothing is kept when not in use, under the supervision of a matron.

This room is provided with 500 separate small compartments or pigeon-holes.

6. Drying room for the drying of exercise clothing.

7. Counter for distributing exercise clothing.

The arrangement of the gymnasium with its above-mentioned accessories presupposed the following procedure: Classes not exceeding thirty would apply at the counter for the special clothing belonging to each pupil and which would previously have been collected by the matron from the respective pigeon-holes in the locker-room. With the clothing would be given a numbered key, on a rubber ring, controlling a correspondingly numbered dressing compartment. During the exercise period the pupil would leave the compartment locked and wear the key around the neck. At the completion of each period the pupils leave their exercise clothing in the compartments, whence it is promptly taken by the matron to the drying-room and later replaced in the proper compartments in the locker-room.

8. Office of the Matron.

9. Locker room for the officers of the school military companies.

10. Coat room for all the boys.

11. Coat room for all the girls.

12. Small cooking room.

13. Large lunch room, to accommodate the entire school.

14. Toilet rooms.

15. Office of the Principal of the evening school.

It may be noted that the general coat-rooms are not provided with individual lockers. Past experience with these in other high schools has convinced the authorities of their undesirability chiefly because of the constant loss of keys by the pupils and the consequent expense of replacing them and of repairing locks. With the new system the rooms themselves are kept locked and are under the control of the janitor or matron during the school sessions.

First Floor.

1. Headmaster's private office.
2. Women teachers' retiring room.
3. Recitation rooms.
4. Handicraft room.
5. Reading room for the Charlestown Branch of the Boston Public Library.

This reading room is regarded as temporary in character, for the space it occupies will be converted into an additional class or recitation room whenever the growth of the school requires it.

The handicraft room contains a large lathe, which can be used either as a speed lathe or an engine lathe, a grindstone, an emery wheel and a circular saw, all driven by electric power. There are twenty individual benches and a wall bench with proper tools, a stock room and quite an elaborate system of cabinets.

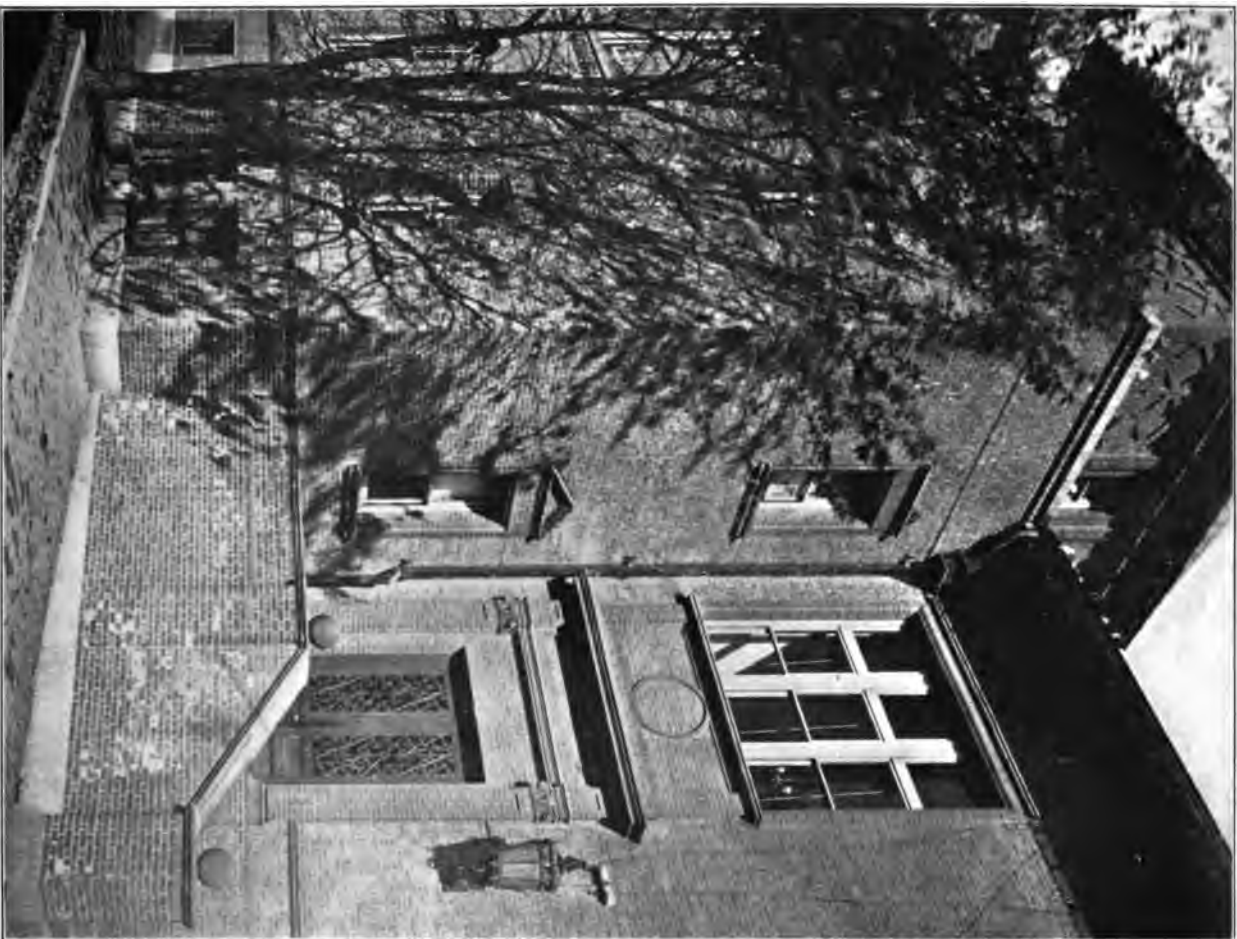
Second Floor.

1. Assembly Hall, with a capacity for about four hundred opera chairs.
2. Commercial room, fitted up with a private room, bank counter-till drawers, tellers' glass windows, etc., etc.
3. Library.
4. Men teachers' retiring room and a boys' toilet room in a mezzanine story over.
5. Additional toilet accommodations.

Third Floor.

1. Chemical laboratory.
2. Preparation room.
3. Stock-room, dark-room in mezzanine story over.
4. Office.
5. Lecture-room.
6. Physical laboratory.
7. Physical apparatus room.
8. Botanical and zoological laboratory, in which is a glassed-in conservatory for plants.
9. Drawing room.
10. Recitation room.

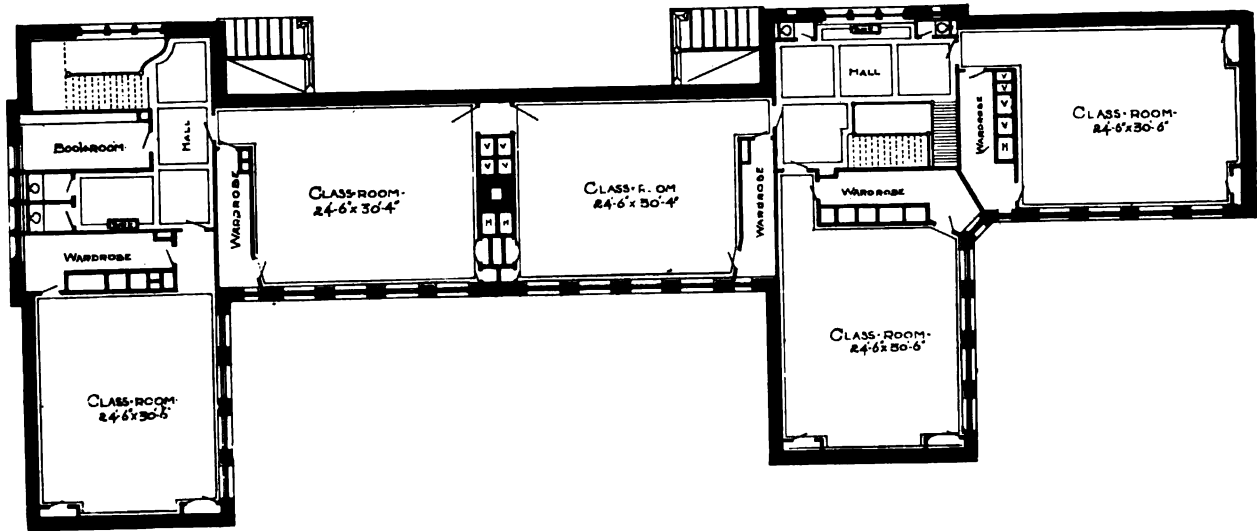
The equipment of these various laboratories and other rooms consists of the usual apparatus, hoods, cases, tables, sliding blackboards, bookcases, cupboards, shelving, etc. This equipment cannot satisfactorily be described without the aid of the detailed drawings and specifications, and these it was found not feasible to publish.



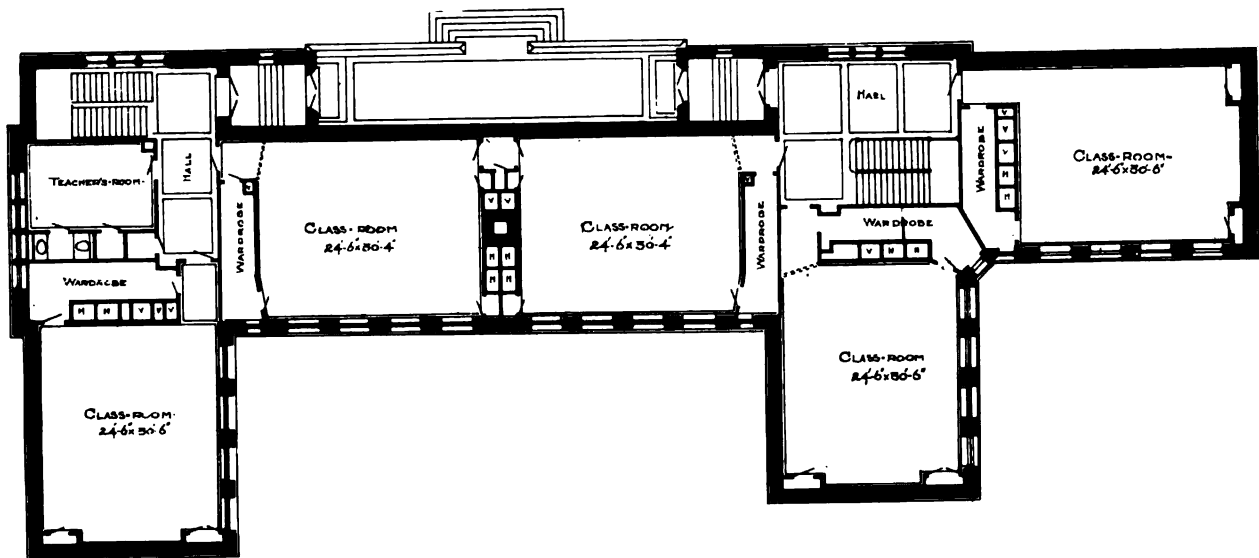
BOYS' ENTRANCE, CHRISTOPHER GIBSON SCHOOL, DORCHESTER, MASS.



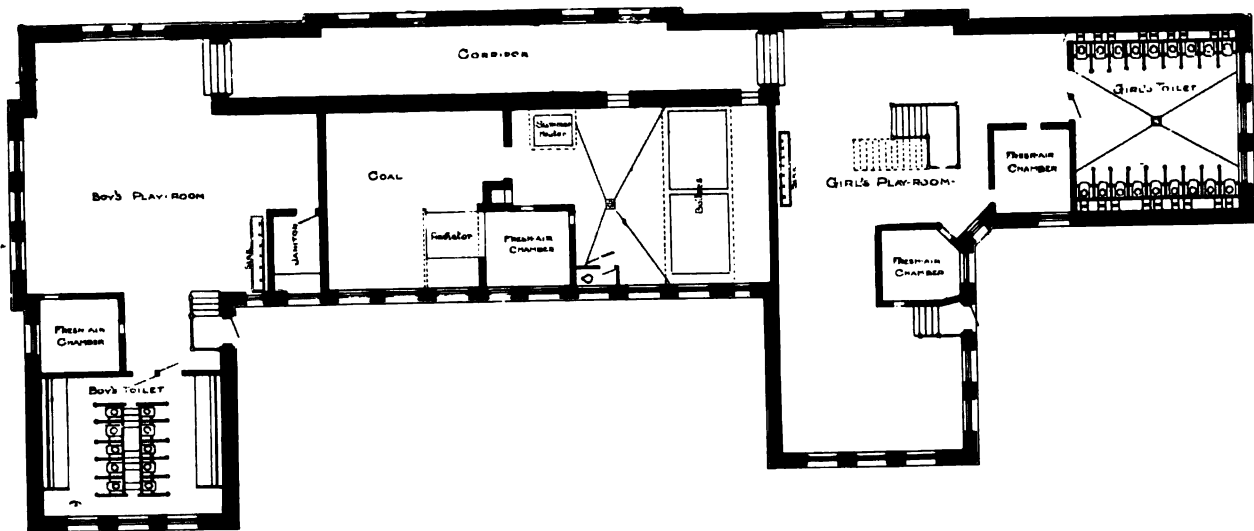
VIEW SHOWING RELATION OF MATHER SCHOOL TO THE MEETING HOUSE, DORCHESTER, MASS.



SECOND FLOOR.



FIRST FLOOR.



BASEMENT.

PLANS: TUCKERMAN SCHOOL, SOUTH BOSTON, MASS.

Charles K. Cummings, Architect.

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The Prospects for 1908 in the Field of Architecture—
The Publisher's Need of the Co-operation of Architects—Mr. Cass Gilbert's Withdrawal from the Competition for the New Municipal Building, New York N. Y.—Objectionable Points in the Competition Programme.

ILLUSTRATIONS:

The Tuckerman Primary School, South Boston, Mass.—
The John Greenleaf Whittier School, Dorchester, Mass.—The Christopher Gibson School, Dorchester, Mass.—The Jefferson School, Roxbury, Mass.—The Charlestown High School, Charlestown, Mass.—The Mather School, Dorchester, Mass.

A CAREFUL consideration of the prospects for the new year in the field of architecture can only prove encouraging. The unparalleled progress of a decade, coupled with the enormous productive resources of a great country, may be temporarily halted without cause, but cannot remain so unless the sources of supply are affected. An illogical financial stringency at the flood-tide of commercial and industrial activity, produced and fostered by sheer lack of confidence in more or less tangible investment, must tend towards the more stable if less spectacular interest in income realities. Municipal and Government building extends over too great a period to be influenced by temporary conditions, and private and corporate enterprises are most interested where conditions offer at least a competitive inducement. The action taken at the recent Convention of the American Institute of Architects, establishing a more equitable and generally higher compensation, is an expression of confidence in future operations entirely in keeping with the spirit of progress which marks an epoch of evolution in constructive architecture. In a comparatively brief period the architect has utilized advanced engineering in the production of certain types of structures to an extent which has materially increased his responsibility. No other profession has encountered and mastered such a vast number of new conditions and requirements in so brief a period.

IT will be the purpose of THE AMERICAN ARCHITECT to record closely the progress of the coming year and to describe and depict in its pages the best architectural product in enterprises large and small; and while valuable additions have been made to the editorial staff and new departments have been arranged, it will remain with those who are in close contact with actual undertakings to furnish what is most desirable and of paramount value to the reader. To this end we bespeak the co-operation of all who are interested in the authentic literature of modern architecture in its constructive as well as its artistic phases. Thus, with all departments fully equipped and the co-operation of the profession, the paper will hope to reflect the progress of the great industry which it has for so many years represented.

IN our last issue we referred to the competition for the new municipal building for the City of New York in order to illustrate the need for some more definite understanding as to the time when the conditions of a competition should become binding on competitors and projectors. A good deal has been said in the daily press about the withdrawal from this competition of Mr. Cass Gilbert, one of those who were invited to take part, as mentioned in our issue of December 21. Mr. Gilbert has given the following statement of his reasons for withdrawing:

I refused Mayor McClellan's invitation to enter a competition for designing the proposed city building at the Bridge Terminal, because there was no assurance that the award of the Jury of Experts would be conclusive. The design selected by the Jury may be thrown aside at the "desire" of the Bridge Commissioner, or may never be carried into effect, for lack of appropriation.

It is not a question of my personal service, which I would gladly devote to a public matter, but when it involves, as in this case, the expenditure of thousands of dollars in the preparation of elaborate competition drawings without any definite assurance of appointment even if successful, it becomes a serious question. I therefore requested twenty-four hours in which to consider it further. As the Mayor wanted an immediate answer, I declined his invitation.

If the law would not permit the Mayor to offer more definite conditions, it is, of course, to be regretted.

When one is asked to undertake a heavy expenditure he should either be proportionately recompensed or have a reasonable assurance that if successful he would be retained.

I appreciated Mayor McClellan's invitation but could not accept it.

A READING of the competition programme shows that objections may reasonably be made to some of its terms. For example, the seventh clause, referring to the report of the Jury of Award, reads as follows:

This report will be examined by the Commissioner of Bridges, who will thereupon select as the winner of the competition the author of the design placed first and recommended by the Jury of Award, unless in his judgment there is reasonable and sufficient cause to depart from such recommendation.

In such case the Commissioner of Bridges shall select another of the designs submitted and will report his decision to the Jury with a full statement of the reasons on which his decision was based. The Jury will then review its action in the light of the objections raised by the Commissioner of Bridges and, in case the Jury does not agree with the Commissioner of Bridges, the author of the design placed first by the Jury will be paid by the City of New York the sum of Five Thousand Dollars (\$5,000) in full discharge of the obligations of the city to him.

This evidently permits the Bridge Commissioner to disregard the jury's award and select any other of the designs submitted. Moreover, although it tells what will be paid to the first prize winner if the jury does *not* agree with the Commissioner, it does not specifically say what shall be paid to the same competitor in case the Jury, on hearing the Commissioner's reasons for disagreement with their first decision, decide to rescind that decision and join with the Commissioner in awarding the first prize to another competitor. From the wording of the

clause it is quite presumable that he might only receive one thousand dollars.

The eighth and ninth clauses provide that:

Eight.—The author of the design finally selected by the Commissioner of Bridges shall be notified within five days after such selection and shall be appointed Architect of the Building, should the Commissioner so decide and the appropriation be on hand.

Nine.—The City of New York and the Architect of the Building may, whenever the necessary appropriation has been obtained, enter into and execute a contract, should the Commissioner of Bridges so desire, with the Architect, conforming in all essential particulars to the "Final Contract for Services," a copy of which is annexed to this programme.

These paragraphs show that the author of the design finally placed first may or may not be appointed

architect of the building; that is, his appointment as such depends on the decision of the Commissioner and the existence of a sufficient appropriation. Even if the appropriation be in hand, the execution of the final contract for services is made to depend on the Commissioner's "desire." Provisions of this sort give an element of uncertainty which, without questioning the good faith of the present Mayor and Commissioner of Bridges, might make one hesitate to incur the great expense of taking part in such a competition when later incumbents of these offices would be free to make a different interpretation of its terms.

Coefficients of Diffuse Reflection¹

IN all problems which have to do with practical indoor lighting, the coefficient of diffuse reflection of the walls plays an important part. In lighting such as we have here in the convention room, the coefficient of diffuse reflection is the permanent factor in determining whether the lighting shall be good or bad; and in all cases there is more or less uncertain factor of wall reflection with which we have to deal.

It, therefore, seems desirable to add somewhat to the meagre data which are at the disposal of the illuminating engineer by measuring the coefficient of diffuse reflection of wall finishes, chiefly papers, in various colors, both by daylight illumination and by illumination from incandescent lamps. The coefficients of diffuse reflection, of course, vary both according to the color of the finish and according to the color of the incident light, the two mutually intersecting. I, therefore, started in to determine a series of coefficients of diffuse reflection varying both these conditions. The material was chiefly wall paper of various finishes and of various colors. The method adopted was to compare each sample with a piece of white cardboard, taken merely for the purpose of a working standard, using the Munsell photometer for the purpose. This photometer gives fairly consistent readings, with a reasonable degree of accuracy, subject only to the condition which affects all photometers, that surfaces of widely different colors are somewhat difficult to compare. Then the coefficient of the standard cardboard which had served for reference was determined in absolute measure by comparing the incident and the reflected flux of light.

The results of this comparison I have expressed in the accompanying table. The sum and substance of the matter is this: that nearly all the colors, certainly all the strong colors, give somewhat lower coefficients than we have been tempted at times to estimate for them. The absolute coefficient of the standard cardboard was .74. The highest coefficient obtained with any wall paper was .64, and that was with a very light cream tint, scarcely perceptibly different from white. That gave a coefficient of .64 with the incandescent lamp, and .53 with diffused daylight from a north window and a clear sky, which was the uniform condition under which the daylight measurements were made. The coefficients of the various colors, which ranged all the way from those nearly white in tint to deep greens and deep reds, ranged down-

ward from .64 to .05, the latter figure applying to dark greens and dark reds. The various results from the papers divide themselves somewhat as follows: Far and away the best, incomparably better than any of the deeply colored finishes, come the very light creams and yellows. These have coefficients of the order of magnitude of .4 to .6; next come the medium papers of gray, yellow, bright red, very light red, pink and lilac. The coefficients of these run roughly from .20 to .40. Finally, last in the line, come some of the present fashionable papers in dark tones, which run down from say .15 to .05, winding up with the deep reds and deep greens, which are nearly equally bad.

As respects the differences existing between the coeffi-

TABLE OF CO-EFFICIENTS OF DIFFUSE REFLECTION.

KIND	TRADE NO.	COLOR	CO-EFFICIENT SKY INC.		REMARKS
Plain Ceiling	3165	Paint Greenish	.50	.53	
"	3158	Light Ecu	.27	.26	
"	3157	Very Paint Gray Cream	.53	.64	
"	3159	Light Gray Green	.26	.23	
"	3167	Light Yellow	.53	.49	
"	3161	Paint Ecu	.47	.55	
"	3162	Paint Pinkish	.41	.43	
"	3160	Pale Bluish White	.42	.31	
Crepes	950	Medium Green	.25	.10	
"	3147	Deep Yellowish Green	.13	.07	
"	3150	Darkish Coffee Brown	.08	.06	
"	960	Deep Green	.05	.06	
"	3148	Deep Yellow Buff	.41	.41	
"	370	Full Green	.06	.06	
"	958	Deep Red	.05	.05	
"	373	Medium Red	.06	.08	
Cartridge	944	Medium Green	.15	.11	
"	3136	Dull Green	.11	.07	
"	954	Dull Yellowish Green	.09	.07	
"	942	Light Pinkish Brown	.21	.26	
"	948	Light Green	.23	.18	
"	940	Light Blue	.21	.20	
"	932	Pale Gray	.35	.27	
"	936	Faint Yellowish Green Gray	.43	.33	
"	934	Salmon Buff	.31	.33	
"	938	Medium Light Buff	.44	.44	
"	1671	Medium Full Green	.11	.07	
"	956	Medium Dull Red	.06	.07	Gray Red
"	952	Light Red	.10	.10	
"	946	Very Deep Ecu	.18	.15	
"	930	Pale Pink	.25	.10	
"	3130	Deep Yellow Gray	.18	.13	
Silky Finish	3137	Medium Crimson	.08	.12	
"	3118	Medium Gray Green	.17	.12	Across Grain
Stripes	1664	Deep Cream	.56	.60	
"	1664a	Deep Cream Silvery	.56	.57	
"	1667	Yellow Medium	.50	.53	
"	1667a	Deep Buff	.53	.58	
"	1670	Medium Red	.06	.08	
"	1670a	Medium Red Satin	.07	.11	
"	1665	Light Strawberry Pink	.43	.43	
"	1664a	Light Strawberry Silvery	.51	.40	
"	1668	Light and Dark Green	.06	.27	Heavily streaked with Deep Green
"	1668a	Silvery Light Green	.13	.14	
"	1666	Light Green	.30	.26	Plain
"	1666a	Silvery Light Green	.30	.23	Corded
Miscellaneous	1650	Dark Green and Gold	.24	.10	Minute
"	1653	Light Green and Gold	.31	.28	Figuring
"	1631	Deep and Light Red	.12	.20	Much Gold
Pique	1604	Light Bluish	.46	.47	
"	1603	Light Gray	.38	.38	

¹A paper by Dr. Louis Bell, read at the annual convention of the Illuminating Engineering Society, and published in its "Transactions."

cients for skylight and those for incandescent electric light, in most cases the incandescent lamp gives a little less satisfactory coefficient by a few per cent. In a few instances, and specially in the light creams and very light yellows, the reverse is the case, these showing up distinctly better by incandescent lamp light than by the light of the north sky, which is strongly bluish.

A particular point of interest is the very deceptive character of some apparently light finishes, grays in particular, and what the decorators are pleased to call "warm" grays more especially. These colors kill the light in a way that is perfectly astonishing to one who is not familiar with them. The coefficients, for example, for a light gray green drop to a little over 20 per cent. in either light, and the light brownish grays are similarly bad. Gray generally contains a more or less strong mixture of black, and frequently a little tint of red; both of these tend to destroy its color-reflecting value.

As between the textures of the papers, except for the silk finishes, which in certain directions tend to absorb light very strongly, there seems to be very little difference, the crepe, the cartridge and plain papers of similar colors having coefficients which are remarkably similar.

A few experiments were made with striped papers, and the difference between the several stripes of the papers found in practice was, as a rule, remarkably small.

In closing I should say that these figures, so far as lights are concerned, refer to light from the north sky on the one hand and light from the ordinary incandescent electric lamp on the other hand. As regards the angles of incidence, which are a very important feature in determining the coefficients of diffused reflection, in all cases the figures apply to medium angles of incidence, say from 35 to 45 degrees. They do not apply in any sense to grazing incidence, but they will be approximately true for the moderate angles. It would be almost impossible, even if it were desirable, to make a detailed investigation of the angular distribution of coefficients of reflection for a large series of papers. It would not be sufficiently instructive, even if made, and these figures will be sufficient to give a fairly clear idea as to the coefficients found with the finishes which are in common use and of which the coefficients do not always bear their values on the face of the paper. The data are for diffusion from a surface where there are no questions of either grazing incidence or grazing reflection coming in, and where there is no element of specular reflection.

Typical Schools in New York, Chicago and St. Louis¹

THE New York type is a most skilful adaptation of the necessities of a city block to the requirements of a school, and the development of the plan that is bounded by party walls is particularly good. The chief requirements are (1) for the class-rooms, light; (2) for the play-rooms or gathering spaces, including gymnasiums, accessibility and light, but the latter not so all-important as in class-rooms; (3) for the Assembly Hall, accessibility and a large area, and light; the last no longer of supreme importance, as artificial light will answer, and in many cases (lectures with stereopticon or evening meetings) daylight is of no importance; and (4) the corridors, sufficient for easy circulation with ample light, the stairs sufficient in number and so placed as to allow rapid emptying of the building.

This New York type meets these requirements admirably. (1) The class-rooms get their light from central areas that cannot be interfered with by other buildings, the distances between the arms of the H (about eighty feet) insuring ample opening to the sky. On the lower floors, and especially in the rooms near the internal angles, a larger amount of glass is desirable than what would be ample on the upper stories. The corner rooms have prism glass to help obviate this. (2) The play-rooms or gymnasiums occupying the basement or the street floor, or both, if two stories high, are very convenient and are so planned as to have good daylight. (3) The Assembly Halls, having the gallery on the first floor level, have the main floor but a short flight of stairs below the sidewalk, and are as accessible as it is possible to be. (4) The corridors occupying the space against the party wall depend on light borrowed from the rooms and on light from the small area placed about in the centre between streets on the party wall. At a slight sacrifice of exterior wall (*i. e.*, class-room space) they might have been carried

through to the front and had really good light. The stairs are well placed, and, being of the twin type, are double the number that appear on the plans. We believe that a single good staircase at each of these points would be better than a twin staircase, with its feeling of enclosure and of cramped headroom, and the slight confusion caused by the alternating direction of landings, but New York has found them very satisfactory in operation. Incidentally they require a slightly greater distance from floor to floor than what is used in Boston. The plan as a whole answers the chief requirements of a modern school building admirably. The system of wardrobes which in New York has been in corridors and does not seem to be ideal has been replaced in this building by wardrobes with sliding doors, occupying one side of the class-room. The development of this idea is shown in a suggested plan coming from Chicago, which will be noted later. If it proves practicable, it will be economy as compared with the Boston type—*independent little rooms adjoining the class-rooms, which is a plan extravagant in area.*

The De Witt Clinton High School is an excellent example of the H plan applied to a city block with light on all four sides. The bars of the H have a thickness of two class-rooms and a corridor, the cross-bar is nearer one street and leaves open areas of unequal sizes. The larger, in basement and first floor, forms the Assembly Hall. The smaller, in basement and part of the first floor, forms the gymnasium. The Assembly Hall with its stage, etc., occupies not only the central area, but all the class-room space on the three sides, and the gymnasium occupies the central area at the rear and the class-rooms adjoining. This is an excellent block, good rooms, well placed stairs and economical corridor space, the latter possibly too economical to insure ample outside light, especially when wardrobes are placed in it. The stairs

¹An appendix to the Annual Report of the Boston School-house Department for the year ending February 1, 1907.

are the twin type. The exterior is a system of bays, which does not express the plan and in many cases gives inadequate light for rooms, which, except for the requirements of the exterior, might have had ample light. This, however, is no reflection upon the general principle of the plan.

New York depends on a certain amount of direct heat in all rooms, a distinct economy (perhaps a justifiable one), over a complete plenum system, but we feel that fresh air is as important as abundant light. Possibly we provide more than is essential; at all events the Board receives frequent complaints as to draughts.

The Chicago plan is a logical development of the New York block plan. It occupies a complete lot about 300 by 300 feet in size (larger than a New York block). In some respects it is a step in advance of the New York plan. It contemplates having a low basement, given up wholly to heating apparatus, the heating, unlike the New York plan, being wholly from a fan. The first floor is on the street level with the Assembly Hall in the centre wholly top-lit, and the rooms surrounding it comprise not only class-rooms, but also the play-rooms, toilets, etc., which would ordinarily be in the basement. The toilets in this plan are distributed on the various floors. The play-room is also equipped as a gymnasium. It is quite ideal to have so much on the street level, and having no children in the space below grade is a very decided advantage. On this large plan of sixteen rooms on a floor, there is opportunity on this first floor for the play-rooms for the boys and girls above referred to, for the offices of the administration and also for six class-rooms. The Assembly Hall is accessible from all four corners. Additional light for the boiler-room below is obtained by making the rooms of administration, which are all small rooms, of lower stud, the floor being above the general level of the first floor. Tested by our floor plan test this gives the following results, showing that it is not an economical floor plan, for notwithstanding the economy of the small wardrobes, the upper floor plans are considerably more than twice class-room area:

Cubical contents.....	1,835,475 cubic feet
Area, second floor.....	27,114 square feet
Area, 16 class-room.....	11,616 square feet
Cubic feet per class-room (54) ..	33,990 cubic feet

On cubic contents it is far below our limit of 40,000 cubic feet per class-room. Here there are six class-rooms on the first floor and sixteen each on the second, third and fourth, a total of fifty-four, which would allow with us a cube at 40,000 of 2,160,000. It is, however, to be noted that the rooms, 22 by 33, are the area of our primary standard (24 by 30) and will not accommodate an average of fifty. So that from the point of accommodation it is not yet reduced to the economical minimum. The points about the plan which seem to have a direct bearing on our problems are the abandonment of the occupation of the basement by anything except the heating apparatus, and keeping the first floor down, and distributing the toilets on the various floors, thus reducing the amount so as not to have additional expenditure. Instead of separate wardrobes it is proposed to utilize the wardrobe in the room as the mouth, as it were, of the vent. All foul air goes through the wardrobe and then out. It is doubtful if this is hygienically wise, and the varying bulk of clothing hung there might have a dis-

tinct influence on the flow of air. The wardrobes are closed by doors that slide up, and which, when down, have blackboard surface. On a very large plan, and both the Chicago and New York schemes require a very big building, there is space to spare on the first floor for a few class-rooms, and compared with a building having a basement and three stories, this building, even without an additional story, would have a large accommodation, and with an additional story the class-rooms on the first floor would be a net addition over the old scheme of three stories, although the top floor, the fourth, would be but a half story higher than the other third floor. The through corridors with their ready access to either street are excellent, and even on the first floor are well lighted.

Both these plans, however, presuppose schools of such size as are never contemplated for Boston, and hardly likely ever to be required. The St. Louis type is therefore much more of an attempt to solve our own problem here. The plan illustrated is a fair example of an ideal open, well-lighted school, a very large lot, admitting of an extended plan and a twenty-four room building on two floors only. All this is quite ideal, but, until land and building are cheaper, it is too ideal a plan for any part of Boston, except outlying suburbs, like the borders of West Roxbury, where land is still cheap. This building, judged on its cost per cubic foot, is economical and the price far below what we must pay per cubic foot. Examined, however, by the standard of accommodation, it is seen to be an expensive school, and the cost per cube is low only because corridor and roof space, of no service educationally, are less expensive than class-room space. The plan is a generous one, its area being far more than double the area of the class-rooms; its cube is excessive, being more than 30,000 cubic feet per class-room. On our standards, twenty-four class-rooms at 30,000 cubic feet, would have given the limit of the cube as 720,000, but the St. Louis cube is 977,200 cubic feet; and 22 cents by 720,000 would have put the cost at \$158,400, but the St. Louis school cost \$190,000. To be sure, this \$158,400 is the Boston "low limit," which has rarely been reached, but the Sarah J. Baker school, a twenty-four-room building, as is the St. Louis one, was built, without bonus, for \$157,344.23. We may at least learn from the St. Louis school the desirability of keeping our suburban schools strictly to two stories in height.

NOTES AND CLIPPINGS

THE FIRST WESTERN COLLEGE.—The old log college which was built by John McMillan on the Fulton farm, about two miles south of Canonsburg, in 1775, was the first institution of learning west of the Alleghenies. In this rude building was founded Jefferson College, which afterward was moved to Canonsburg and in later years was united with Washington College to form the present Washington and Jefferson College. The old log building is about to be removed to the campus fronting Central Avenue and College Street. The contract for moving the building has been let to Thomas Cook, of Washington, and work will begin at once.

THE TOWER OF ST. MARK.—The Campanile of Venice is emerging from its ruins. Substantial progress has been made during the past few months and the new tower now stands nearly eleven meters high. Construction goes on at the rate of about 48 inches per week, and it is estimated that the work will be completed in two years.

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Old Gambrel-roof Houses in New Jersey

"Know old Cambridge? Hope you do.
Born there? Don't say so? I was too.
Born in a house with a gambrel-roof—
Standing still, if you must have proof.
Gambrel? Gambrel? Let me beg
You'll look at a horse's hinder leg,
First great angle above the hoof—
That's the gambrel, hence gambrel-roof."

—*"Parson Turrell's Legacy," Oliver Wendell Holmes in the
"Autocrat of the Breakfast Table."*

DURING the early part of the Seventeenth Century, Holland, emulating the example set by Spain, sought to secure in the new world equal commercial advantages. After the establishment of the Dutch on Manhattan Island in 1614, preparations were made for colonizing the valley of the Hudson river and inaugurating a system of government that would meet the requirements of the settlers. Patroonship, an interesting feature of Colonial government at this period, was instituted. The more important points of this system were: The investing of the patroon with manorial rights, and power to hold court. The manor ceded to a patroon was in the form of a grant of land. These tracts, usually on the banks of some river or stream of importance, were generally sixteen miles in length on one bank, or eight miles long on both banks, extending back into the adjacent country as far as the conditions existing would permit. It is on these tracts that are to be found to-day the interesting examples of gambrel-roof houses herewith illus-

trated. The heavy walls of these houses were constructed of stone taken from the slopes of the high plateau that marks the west bank of the Hudson river. These walls were usually pointed with white mortar. The roof was low and of very moderate pitch for about ten feet both ways from the ridge; from this point the angle was sharper till near the eaves, where it curved gracefully outward, extending from four to six feet beyond the walls. This broad expanse of roof surface made the upper stories of the houses uncomfortably hot in summer and equally uncomfortable during the rigorous winters of this section. To overcome this objectionable feature meadow grass was often placed between the rafters and no doubt acted somewhat as a non-conductor. It is interesting to note the gradual development of this overhanging roof as shown in the architecture of modern suburban houses, where porches or piazzas are placed beneath it.

In the houses illustrated herewith the interior arrangement was found to be almost identical and to follow the general scheme of a central hall extending from front to rear, with rooms grouped on either side; the kitchen, ordinarily used also as a living room, being generally located with a southerly or easterly exposure. The interior walls were plastered and in some instances wainscotted, but the ceilings were formed by the floors of the story above, laid on beams often of extravagant dimensions.

The outer doors, of which there were usually two or more, were cut laterally and known as the upper and under doors. As the apple crop was an important feat-



ROCHELLE PARK, N. J.

ure of these early settlers, frost-proof cellars, partially underground and built of stone with straw-thatched roofs, are to be found on almost every farm.

The best and perhaps most picturesque example of these old Dutch houses is the one located at Hackensack, a neighborhood where many examples of the old gambrel-roof are to be found. While in some cases windows have been added in the gables, and a porch run out at sides, these houses stand to-day practically the same in general outline as when constructed.

Leaving Hackensack on the old Polifly road (polifly meaning "west meadow") are other and equally interesting examples of the gambrel-roof, the one at the Lodi railroad crossing being the best. The woodwork in this house, in a much better state of preservation than is generally to be found, shows refinement in a high degree. The doors, mantel, trim and all moulded work is full of character and equal to the best examples of the Georgian period. The front-door architrave has a neatly carved



LEONIA, N. J.

spiral moulding. The hardware is hand wrought. A good example of the artistic labor spent in this direction is the wrought-iron shutter, "holdfast," which is illustrated herewith, together with other interesting interior details of this house.

Continuing on towards Woodbridge, one passes a farm that still retains many of the features of the Eighteenth Century. The house, of stone, has the usual gambrel-roof of the period, differing in the fact that at the eaves is a cornice in place of the usual overhang. The entrance porch presents good architectural detail, but the columns are apparently of a much later date than the house. The glasswork of the fan and sidelights is well designed, and among other decorative motives there is a figure of the Madonna in wrought iron. This figure of a Madonna or of some saint is found very frequently in the fanlight of houses of this type.

A student of this period standing on the porch of this old house can readily reconstruct the old boxwood borders, some vestige of which still remains, the surrounding orchards and the usual bowling green. Nearby is an old sundial, almost concealed in a tangle of flowering vines.

The architectural student in his tramps abroad in search of the good and the picturesque finds repayment in so excellent an example. At Mayand and at Rochelle Park, west of Hackensack, are other gambrel-roof houses, notably at the last-named place, where is the Christie house, more than two hundred years old. The white painted



HASBROUCK HEIGHTS, N. J.

gambrel-roof house at Bogota is an interesting variant of the usual construction. This house, built before the Revolutionary War, is in excellent preservation. It is covered at the front with narrow clapboards and at the sides with split shingles. The doorway is particularly good in design. The stairway in the hall has a square tapered mahogany newel with delicate balustering of rectangular cross-section, surmounted by an oval mahogany hand rail. The mantel in the living-room, though bereft of some of its applied ornament, is of good design and has excellent mouldings. In most of the houses visited it was noted that the mantels carried little if any applied or carved ornament, that used being generally moulded, turned or incised.

It is interesting to note the fact that these houses stand within the boundaries of the suburban district of New York. In many cases they are still in the possession of the descendants of the original builders. But probably before many years they will be razed to make room for more modern, if perhaps less interesting, examples of domestic architecture. It is a source of satisfaction to record the solid and substantial qualities of the early Dutch settler, not alone from the standpoint of good architecture, which the exterior of these gambrel-roof houses evidence, but to also express an appreciation of his artistic sentiment as shown by his domestic interiors.

O. J. GETTE.

The Genesis of the Gambrel-roof

A FEW years ago there fell in our way a photograph of a crude little sketch of the town of Plymouth, Mass., as it appeared not very many years after its settlement—a crude little sketch, as we say, just the sort of thing that a traveler not too well skilled in draughtsmanship incloses with his latest letter to the old folks at home; not unlike the memorandum sketch that an engineer-officer might make surreptitiously of an enemy's outworks. The modern legend under the sketch declared that it was made from the hillside in 16—we forget the exact date now—on the leaf of a diary kept by one of the citizens and but recently discovered by a local antiquary.

The sketch showed a small group of buildings, in the distance near the shore, and scattered along the road crossing the foreground and leading into the town were four or five houses or log cabins, and when we brought our magnifying glass to bear on these we felt we were at length on the right road to the solution of a puzzle that had long vexed us; for while three of the buildings were covered, as might have been expected, with a pitched roof, the other two were closed in with an unmistakable gambrel-roof, and, what is more, that gambrel-roof was thatched! Here, then, was evidence of the earliest use in this country of this form of roof, inferential evidence that it was an imported form and perhaps even proof of the trustworthiness of a belief, long entertained—on what grounds we cannot now conceive—that the birthplace of the gambrel-roof was Holland. Further than this, here was a distinct link that search for the village, county or country where this form of roof was first devised should be carried out in those countries originally, even if not at present, given to covering the roof with thatch. The little photograph was a real discovery, a true aid, and we at once set about making use of it, and naturally the first thing was to learn all about the original sketch and the diary which it illuminated. The investigation was short and the revelation was complete. The sketch was



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simply a "fake," and the diary no less fraudulent. It was one of those pious frauds that the promoters of church fairs permit themselves to carry out for the sake

of expanding the church's capacity for carrying on its charities. Interest in the problem had been revived, however, and last year we begged some friends about to travel through Holland to search through all the photograph shops they encountered and bring us everything that showed a building covered with any form of gambrel-roof. Our friends were more faithful to their promises than travelers usually are, but though they brought us interesting photographs a-plenty, we could discover amongst them never a trace of a gambrel-roof.



WOODBIDGE, N. J.

Evidently, then, the Pilgrims had not, during their longish stay at Leyden, as we had believed they might have, acquired a love for the comfortable, home-like gambrel-roof there prevalent and taken early opportunity to introduce the style in their new country. As Leyden seems to have no roofs of the type, the Pilgrims could not have found their model there, but must have brought their memory of it with them from some English town. It is possible that buildings in that part of Lincolnshire where some of the Pilgrims lived may once have had gambrel-roofs, but we never noticed them then, and if they were wooden buildings they probably disappeared long ago, as have most of England's timber dwellings.

But the suggestion offered by our fraudulent sketch is not a bad one, when one casts about in search of a plausible source and cause of origination, Thatch.

Go into the rick-yard of an English farm to-day at dusk and the chance is that you will get a very good impression of a group of gambrel-roofed houses. There you will find raised on low frames—which will answer to the low house wall—good quadrilateral ricks of hay, the sides perpendicular or leaning in or out, as the case may be, but each carefully thatched on top to shed water. It would not take a very imaginative person to group the idea that the homely hay-rick offered a good outline for a dwelling.

As the outline of the gambrel-roof is merely that that would be obtained by closing in a roof supported by queen-post trusses, with a proper water-shed, it may be that light on the subject could be had by making a study of English barns, particularly the great tythe barns with their interesting framing.

Of course, when we say we have not been able to find the source of the gambrel-roof in England, we do not mean that no examples of the type are to be found there, but they are sporadic. For instance, the chapel at Hampton Court Palace, with its fine hammer-beam trusses, is covered by a gambrel-roof.



HACKENSACK, N. J.

As the word gambrel is, etymologically, derived from the old French word "*gambe*," one might think that France would be the country where the type originated, but we believe that search there would be more hopeless than anywhere else. To be sure, the cross-section of a gambrel-roof and of the curb-roof invented by Mansard—if he did invent it—are practically identical; but when it comes to external expression there is a vast difference. The French roof was evolved naturally in the attempt to provide as much utilizable space as possible within the circumscribing arc that the French building code imposes on architects, while the gambrel-roof proper was evolved in the open, where building codes did not restrict or stimulate ingenuity.

If at the time Viollet-le-Duc were writing his "*Habitations of Man in All Ages*" it had occurred to him that the gambrel-roof needed accounting for, perhaps he might have given the explanation in this way: Jean and Jeannaton being disposed to become one, decided that they would economize their funds at the expense of the local carpenter and have an old-fashioned house-raising. Jean, therefore, hauled the needed lumber to the selected spot, and, being a true Norman, not one inch more than would be necessary. In order that the affair might come off with snap, he also provided plenty of hard Norman cider. On the appointed day the work marched like clock-work and by mid-afternoon the gable walls were ready for the ridge-pole and the laying of the rafters. At this point it was discovered that, owing to the merrymaking and the cider, the men who had been getting out the rafters had cut them all too short by about a third! There was no more lumber at hand and the house must be closed in before dark. It looked like an impossible case, until Pierre, the village genius, suggested that two of the shortened rafters should be lapped just enough to allow the driving of a wooden tree nail. This done, the end of one rafter was placed in the ridge-pole and then, by "raising" at the pegged joint, the lower rafter was revolved outward until its lower end could be dropped over the plate. The roof-boarding once in place, the trick had been turned, the

house was finished on time (though the rafters were farther apart than was intended, and Jean and Jeannaton had set a new fashion. The roof had a mass and dignity no roof had ever had before and to every one's surprise there was a larger and more convenient space on the top floor than could be found elsewhere. The new style "took" and shortly all Normans of that day adopted the *toit gambé* for their new buildings. Unfortunately for posterity the only wood at that time used for building purposes was chestnut, and the result has been that in a few years all these roofs "powder-posted" and disappeared, so that the modern antiquary now looks in vain for any gambrel-roof in Normandy.

In this way Viollet-le-Duc did not account for the genesis of the gambrel-roof, but it is a possible explanation and we may as well let it go at that.

What is really interesting about this form of roof is that it belongs by right to the peasant and the yeoman, whose nature type of dwelling is the story-and-a-half house and for whom it is of the utmost importance that his half-story shall be as commodious as the given quantity of building material can provide. It is for this reason that the small cottage covered by the gambrel-roof is always more pleasing than a large building where the roof type is the same. Through long habit, through seeing samples on every side, the eye has been educated to understand and appreciate the suitability of the small cot-



PORCH OF HOUSE AT WOODBRIDGE, N. J.

tage of this type and seems to recognize as an impertinence every attempt to adapt this form of roof to larger buildings. It should be accepted as a rule, after a very

short observation, that a gambrel-roofed building cannot really be satisfactory unless the roof has a greatly preponderating value in the effect. It is the neglect of this law that makes so many of the two-and-a-half or three-and-a-half story buildings, gambrel-roofed, so distressing to the eye. The roofs actually used are too small; they either count, as mass, for less than the walls or just about equal them, whereas the roof should be the one thing that counts and the walls a mere support for it.

In New England the gambrel-roof has always been a favorite; there are too many delightfully comfortable and home-like houses of this type scattered through the six

States for any man whose thoughts are turned to building to overlook, and except during the short time when the fever for the mansard roof raged there never has been a time when it has been neglected wholly by builders. During the last twenty years, thanks to the great activity in building, but mainly to the circulation of the building-papers that devote themselves to cheap houses, the vogue of the gambrel-roofed house has extended all over the country to such an extent that it may be considered the American type of house, but it is not proper, we believe, to allege that it is an American evolution.

WM. ROTCH WARE.

The Diary of John McComb, Jr.

ARCHITECT OF THE CITY HALL, NEW YORK, N. Y.

AMONG the papers relating to the City Hall in this city, recently brought to light, in the custody of the Historical Society, was the diary of John McComb, Jr., the architect.

This diary covers the period from 1801 to 1804 and should be interesting reading to architects and builders. It most graphically, and in many instances pathetically, shows the trials that beset the architect engaged in city work. Conditions at that time appear to have been fully as trying and irksome as at the present day. From the outset it would appear he was "bothered and hindered" by frequent demands to alter his plans, and submit to exacting requirements that to his mind tended to lessen the artistic value of his work. In spite of a most emphatic protest he was compelled to reduce the depth of the building as originally planned. McComb's fee, he tells us, was "six dollars per day while engaged on the work." If additional payment was made for the plans it is not recorded.

On April 5, 1803, he wrote:

"I marked out the ground for the building, and the cartmen began to dig for the foundation.

"Previous to this the corporation resolved to have the length of the building agreeable to the original design of 215 feet 9 inches, but insisted on the building being reduced in depth as they had directed in March. Reducing the projections in front I readily agreed to, but cutting off the depth of the building I contended was a very bad plan, as it spoils the proportion of the large court-rooms, and will cramp the whole of the work, but no argument could prevail. Several wished to cut off the projection in the rear, and two of the committee insisted that the north front had better be built of blue stone."

The cornerstone was laid on the 26th day of May, 1803, in the twenty-first year of the Independence of the United States.

McComb writes it is highly probable that his statement of the amount due him to a certain date, as rendered to the city, was short of the correct sum, as he omitted to note the exact date he began his labors and he is equally sure he had failed to set down many days' time spent on the work.

The original estimate was \$200,000, and this was further increased by \$43,000 when, at his suggestion, it was agreed to build the front and ends of marble in place of the brown stone.

Up to this time it had been intended to build the hall of

brown stone, and a quarry of that material had been leased by the city in Newark. It was McComb's desire, however, to use marble, and his arguments were finally effective, for on September 3, 1803, he added this to his diary:

"By a conversation with some of the members of the Council, I found them more in favor of white stone for the principal front than they were.

"I generally spent about half my time in town at the building, the other part at the quarries. I got a number of very good stone from the new course at Hawthorn's quarry."

Just whether or not McComb's plan included additional buildings at the rear of the City Hall that would screen it and thus not expose the difference in color of the exterior materials, is conjecture. Certain it is, however, that New Yorkers have treasured the legend that when this building was erected the rear was not completed with marble because it was not expected the city's growth and avenues of traffic would extend during the life of the building north of its building line. Progress on the building suffered delays because of "dissatisfaction on the part of the workmen as to their pay." An interesting example of a building strike, and probably the first instance in the nineteenth century. There was a further considerable delay owing to an epidemic of fever that "caused every one to flee to the country." Throughout the many vexations that beset McComb, the exactions of his client, the trouble with his workmen, and the detention caused by the epidemic, his comments on the existing conditions show with what fortitude and great patience he met and surmounted them.

The marble was exceedingly hard to get to the work, as it had to be hauled on sleds from the quarry in the Berkshires. McComb notes in his diary that he sent word to the quarrymen "to begin hauling at once while the sleighing was good."

Compensation of Lemaire, the artist who, under McComb's supervision, carved all the capitals, was four dollars a day, "a price the Common Council regarded as most excessive."

Unfortunately, this diary ends before the completion of the building, so it is not stated just how far his final labors were appreciated by his client, but he records that at the laying of the corner-stone neither he "nor any of the workmen were noticed by the Mayor," a lack of appreciation for which posterity has amply atoned.

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The Accountability of the Architect to His Client—Gift of Mrs. Russell Sage to Enable the Restoration of the Governor's Room in the City Hall, New York City—The Contemplated Demolition of the Equitable Building.

CERTAIN indications, which we have lately remarked, lead us to the belief that there exists on the part of the public an increasing tendency to hold architects more strictly accountable than formerly not only for the faithful completion of the work entrusted to them, but also for any errors of judgment or design resulting in a building deficient in strength or other known requirements. There is no doubt that greater precision and higher efficiency is demanded each year, in the arts and the professions generally, and probably from no class has this demand been more insistent than from owners and those to whom architects are responsible.

AN interesting illustration of this tendency is furnished by the case of Mr. C. E. Keyser vs. Messrs. Trask & Sons, builders, and Mr. Doran Webb, architect, alleging respectively breach of contract and negligence. The issue was recently tried in the King's Bench Court, London, and terminated in a verdict for the plaintiff against both defendants. In accordance with this decree the architect is held responsible, by reason of his failure to render adequate supervision, for a portion of the loss and damage resulting from the contractor's scamping the work.

We have not before us the evidence upon which this verdict was reached, and so can form no opinion as to the line of the defense, but the result of the trial as noted cannot fail to be of interest to the profession. A full realization of his responsibilities, financial and otherwise, is of the utmost importance to the architect.

A SECOND illustration of this public disposition is supplied by the controversy reported between the Mayor of an eastern city and a well-known firm of architects. A municipal building was found, upon completion, to be deficient in the strength of its floors, and for this reason the Mayor in a special message to the Council seeks to prevent the architects of the building in question from taking part in future competitions. The architects, while not disputing the contention of the Mayor, set up the defense that an insufficient sum was appropriated for the purpose and that the building provided was the best that could be constructed for the money available.

While for the sake of economy an architect might be willing to sacrifice certain desirable features of plan and decorative treatment, it would seem that where insufficient funds were available to provide a structure of adequate strength to meet known requirements, his duty would be plain. To attempt the erection of a building under such conditions would be an injustice to his client, would inevitably injure his own reputation, and would reflect discredit upon the profession.

THE recent announcement, that through the liberality and patriotic spirit of Mrs. Russell Sage the complete restoration of the Governors' Room in the New York City Hall is now assured, has been received with gratification and pleasure not only by architects and lovers of art throughout the country but by every American interested in preserving the atmosphere of Colonial days. This room, the most important in New York's most beautiful building, has passed in recent times through many vicissitudes. For some years it has been at the mercy of would-be improvers. It has been altered, decorated and furnished till little trace of the original elegant simplicity remained and the portraits of Washington and other famous Americans looked incongruous in their new and dazzling setting. The work of restoration will be directed by the Municipal Art Commission through a special committee composed of Robert W. De Forrest, Frank D. Millet, Arnold W. Brunner, Walter Cook and John B. Pine. The discovery of the original plans for this work, prepared by the architect, John McComb, reposing in the custody of the Historical Society removes any difficulty in the way of a restoration in its truest sense and it is our earnest hope that future custodians of this historic structure will hesitate long before attempting anything in the nature of improvements. It is most unfortunate that some means has not been devised to protect adequately this externally beautiful building from the enterpriser and the recklessness of those temporarily in power.

THE contemplated demolition of the Equitable Life building in New York, to make room for a larger, more modern, more efficient building, reported in the daily press, furnishes a striking illustration not only of the rapid advance and development in the planning and equipment of commercial structures, but also the recognition of this development by invested capital, and its consequent demands, necessitating the razing of structures valued at millions of dollars. Less than twenty years ago the building was completed in its present form, and, judged by the standards of its day, was considered a marvel. No expense was spared in building or equip-

ment, and yet so rapidly do newer methods of construction, more advanced ideas of planning and increased facilities for the convenience of tenants follow one another that the building is now found to be inefficient as to plan, and lacking in equipment. Doubtless, also, its height of only eleven stories has furnished one of the most potent arguments in favor of a new building, for situated on immensely valuable real estate, a building of such moderate height can never be expected to pay more than a very nominal rate of return to the investor.

The Artistic Use of Steel and Reinforced Concrete

By C. HOWARD WALKER.

THE artistic use of steel and reinforced concrete in building construction is considered a new problem in architectural design.

"Wherever a combination of materials which is somewhat new in character becomes usual by the number of its examples, there appears a desire to analyze its component parts, to make its architectural expression characteristic; to enroll it under *Architecture Raisonné*, and naturally to exaggerate its peculiarities in the process. The intention is excellent and admits of no contrary argument. What can be more undeniable than that architecture should express structure, and that unusual structure should demand unusual architecture. If any contention is at all possible it can be merely in relation to the degree in which this construction is unusual, and, as a corollary, as to how unusual the architecture must be to express it. Is reinforced concrete new in the elemental factors of structure, and to what extent? Its main factors are vertical supports and horizontal loads (in which it resembles Greek structure), both of which are reduced in cross sections to areas less than in any other construction. It has no structural arch, though it has curved trusses or beams (in which it does not resemble Roman structure). It has continuous vertical factors with the horizontal factors inserted between (in which it resembles much of Gothic architecture), and it has horizontal planes in its floors which appear on the façade in which it is in no way unusual. What are the differences, apart from the areas of its cross sections, between it and other structures?

"First, it is made up, as far as its vertical factors are conceived, of slender piers; second, as far as its horizontal factors are concerned, by beams of great possible span; and both piers and beams are each homogeneous, not built up of separate blocks as in stone or brickwork, and therefore corbels are inconsistent. A reinforced-concrete structure is therefore a pier and beam structure of slender supports and long spans, its intercolumniation being much greater than in any previous type of building, and from our constant association with shorter spans the beams seem weak.

"The openings between the piers are unusually large, the whole structure appearing to be slight and undeveloped. Up to this point the choice of treatment seems to be merely as to whether the continuous vertical supports shall be announced or the successive planes of the floors. The decision as to which of the two methods of expression shall be adopted depends entirely upon the location of the building and upon the proportion of its height to its width. Isolated buildings of great height may well be

treated with long, vertical lines; but, in the majority of cases, the building requires a horizontal treatment as it is associated with other buildings in the same block and its assertion of vertical lines is overwhelmed by the length of the base line of the block. Also the vertical lines are ineffective in shadow, as they can have but slight projection, and as they are merely surface indications of interior structure and are not buttresses. Horizontal lines, on the contrary, always produce shadows. In most cases, therefore, the treatment of reinforced-concrete buildings by horizontal lines announcing their floors (the distances of which apart are of much more nearly fixed dimensions than are the intercolumniation of piers or the height of verticals) is better in relative proportion to adjacent buildings, and affords stronger evidence of purpose than does the exaggeration of the verticals.

"The apparent weakness of the long lintel has been mentioned. This can be modified in several ways, either by crowning the centre, which is of little value in long spans and is inconsistent with the concealed structure, or by arching the lower line of the lintel, or by bracketing at the piers. The cornice is capable of any treatment which does not suggest stone corbels or modillions. The next problem is that of the necessary filling treatment of spaces between factors of main structure of the openings between the piers and the successive floors. This is manifestly a screen only, whether of plain surface or of fenestration. It supports nothing. Its structural requirements are merely those of frames to openings and of surfaces between these openings. As its structure is unimportant, and can be done in many ways, there is no reason that it should be announced than that the palm of a man's hand should announce the bones beneath. The anatomical structure of the building is adequately recognized when the piers and lintels are acknowledged; in fact, it is not necessary even in *Architecture Raisonné* to announce them, provided they are not contradicted.

"The suggestions for this secondary treatment of curtain walls between main structural factors may either be derived from minor structure or may be surface ornament only. If from minor structure, it is probable that it will evolve into a system of slightly recessed vertical panels. As the vertical factors in the structure are usually more in number than the horizontal ones, and as these factors are slender, the stiles of such paneling would be narrow. Vertical paneling, whether of the type of perpendicular Gothic, or the panels with modeled or mosaic borders of Byzantine work, or the Renaissance paneling of Fra Gioconda, are all suggestive of possible treatment. The frames to the openings can be treated like any frames, either simply or elaborately, as they are simply borders confining spaces. If, on the other hand, the surfaces are not to announce the minor structure, they may either be plain or have surface ornament in the form of all-over patterns, low relief, mosaic or sgraffito, care being required only that the scale of the pattern or relief shall not be so great that it cannot be apparently readily carried by a thin wall. Deep reveals and soffits are necessarily artificial, and not expressive of the structure, and the contrasts of light and shade usually obtained by these may be either produced by modeling or by color, or both.

"The basis of the structure is metal, which is concealed and protected in all important structural parts of the building, but can readily be announced in the openings by grilles or delicate metal fenestration. Excellent

opportunity and great latitude in design are possible, therefore, in the subdivision of the openings, either in cast or wrought metal, such detail being an admirable contrast to the other type of ornament of the concrete. The concentration and elaboration of grilles at the top of openings has numerous prototypes in all styles of architecture. Because metal is capable of long, sinuous curves, it is by no means essential that minor detail should adopt such an initial scheme, and become thereby too important and out of scale with the other proportions of the building. The main surface of a reinforced-concrete building is of concrete, a material which is homogeneous, has no joints, and is actually a thin skin to the structure, but sufficiently thick to cover and disguise the joints of the structure. It is inferior to most stone in vivacity of surface texture and to both brick and stone in the scale given by constructive joints. It has, however, been more frequently used as a surface than any other material, and when finished with stucco, as with the Egyptians and Greeks, it presented a surface which admitted equally of the most vigorous and the most delicate polychromy. Its surfaces were those of unblemished parchment, making an admirable background not only for color, but for *impasto* ornament. When two surface coats of contrasting colors were laid, sgraffito or scratched detail was possible, the only objection to this type of work being the action of frost upon it. Concrete surfaces also permit the insertion of fragments of other material, marbles, metal, or glass or tiles embedded in it in patterns. Entire

veneers of these, however, which entirely conceal the concrete, seem insufficiently supported unless they have their own independent system of apparent structure.

"Another element of metal structure is that of the occurrence of stable projections which are greatly in excess of those which can be safely supported by any other materials. When such occur, as in bays, etc., the supporting factors should be strongly announced and even exaggerated, for we have not yet adjusted our sense of security to masses supported upon thin forms.

"Ornament in architecture accents the component parts, either of the structure or of the composition of the façade. That which accents the component parts of the structure either accents the joints or indicates the interstices of structure. The accenting of joints is usually performed by mouldings or by concentrated spots, such as rosettes and capitals. The indication of filling of interstices such as tympana, spandrels, panels, etc., any of which could be removed without jeopardizing the structure, is usually by ornamental patterns. The ornament which accents lines of composition is usually on vertical axes and is of specially designed spots, such as keystones, cartouches, exaggerated corbels, etc. This latter type is used sparingly or is absent in the best architecture of all styles, excepting when it is in the form of pinnacles, canopies, and heraldic scutcheons, in which case it has an individual purpose in addition to that of mere accent of vertical axis.

(To be continued.)

ILLUSTRATIONS

HOUSE OF CLIFFORD WHARTON, ESQ., NETHERWOOD, N. J. MESSRS. TRACY & SWARTWOUT, ARCHITECTS.

The exterior of this house is of trap-rock, seam faced and Portland cement stucco on galvanized metal lath. The upper stories of shingles laid with a broad surface to the weather. All exterior woodwork is of chestnut, stained brown. The carriage entrance is at the rear of the house, from which one may enter either through the large entrance hall of the basement or up the stone steps to the first floor level. In addition to the large entrance hall, the basement has a gymnasium, bathroom, laundry, lavatory and coal storage rooms.

The arrangement of the first floor is particularly good. The large living room, the walls of which are hung with tapestry, extends the full depth of the house, the windows at the south or rear overlooking a picturesque valley. The staircase hall is separated from the reception-room by a screen of old leaded glass. The woodwork throughout is gray-brown oak. Off the reception-room is a den. The dining-room walls are hung with varicolored Spanish leather. On the second floor are five large bedrooms, finished in white enamel. The bathroom has a tiled floor and walls of modern sanitary finish.

The third floor has three servants' rooms, a bathroom and large storage space. House is heated by hot water.

FARM COTTAGE OF TRACY DOWS, ESQ., FOXHOLLOW FARM, RHINEBECK, N. Y. MESSRS. ALBRO & LINDBERG, ARCHITECTS.

This cottage is a particularly fine example of Georgian architecture, the parent of our Colonial work. It was built primarily for the use of the Superintendent of the farm, but is at present occupied by the owner. This is an entirely new building and but six months completed, yet gives the impression of having stood many years on its site. The stone of which the building was constructed was taken from the stone walls of the neighborhood, and was evidently selected with great care to expose the weathered faces and to secure a horizontal effect which gives the stone work its character. The wings of the building are sheathed with large hand-made shingles.

The plan of the cottage is along the lines of a simple Colonial farmhouse. From the hall, running through the centre of the

house, opens the living-room on the left, and the dining-room on the right. At the rear of the hall is the staircase to the second floor. The tea room, opening off the living-room, is the piazza wing one sees on the left of the illustrations. This in winter is inclosed with glass. It has a large stone fireplace, thus turning the piazza into a sun-parlor.

The wing on the right contains such service rooms as the butler's pantry and laundry, and also the porch opening from the dining-room. The kitchen, servants' hall, etc., are located in the rear of the laundry wing. The second floor of the cottage contains six bedrooms, three baths and accommodations for several servants over the service wing.

HOUSE OF JAMES IMBRIE, ESQ., ENGLEWOOD, N. J. MR. AYMAR EMBURY II., ARCHITECT.

This interesting house is built with white clapboards throughout. The trim is white with green blinds and roof. It was the intention of the architect to reproduce the Charleston type of house, with advantage of the second story piazza for warm weather. Trim of first floor, living-room and dining-room is stained gray and the walls are finished with old-rose grass cloth. The hall is finished white with plain dull green paper.

HOUSE OF BRUCE CRANDALL, ESQ., KENILWORTH, ILL. MR. ERNEST MAYO, ARCHITECT.

This house presents the individuality of the architect in a most interesting manner. The exterior is of stucco, with soft gray trim. The living-room or first floor has a large fireplace and mantel in a picturesque nook, lighted by window openings leading into the dining-room. The dining-room is connected with the kitchen by a butler's pantry extending the full width at rear of high nook. Oak floors and yellow pine trim throughout the first floor. The second floor has Georgia pine floors and poplar trim.

MEASURED DRAWINGS BY O. J. GETTE, ARCHITECT.

Illustrating article on Old Gambrel Roof Houses in New Jersey.

Additional Illustrations in the International Edition.

VIEWS FROM SOUTHEAST AND ENTRANCE DETAIL, FARM COTTAGE FOR MR. TRACY DOWS, RHINEBECK, N. Y. MESSRS. ALBRO & LINDBERG, ARCHITECTS.

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The New Hearst Building, San Francisco, Cal.

IN the planning and erection of a tall building throughout that area of known seismic disturbances along the Pacific Coast, the first consideration of the architect and engineer would be the stability of the structure. To prepare for every known condition, learned only after a careful study of results as shown by the recent earthquake and more disastrous fire, and also to foresee if possible other and equally possible contingencies and provide such measures of safety as would meet them, was the problem confronting the architect and engineer. Conditions of wind resistance, load and general stability, offer in themselves no great difficulties. Their action and influence on the building as a mass are from experience, easily reducible to known values, but the earthquake shock, its direction, force and duration, are variable quantities, and demand the exercise of both resourcefulness and judgment on the part of the architect.

In planning the new Hearst Building at San Francisco, the architects would naturally make an exhaustive study of the various problems presented, not alone from the purely architectural standpoint, but from the engineering standpoint as well.

This they have done, and the result of their investigations was to confirm the conviction that a properly de-

signed and constructed steel cage, really protected by fire resisting material—in contradistinction to so-called fireproofing methods—would without question withstand earthquakes even more serious than the last, without serious injury.

The principal damage to buildings in San Francisco was through fire and the failure of what had been considered fireproofing material, and also the absence in many cases of even ordinary fire resisting coverings.

In the designing of this building both the architect and the engineer were thoroughly agreed that the foundation should be a rigid mass covering the entire area as far as practicable, and that this bed of protected steel grillage should be built to withstand any unusual and accidental stress to which it might be subjected. Upon this grillage, heavy plate girders are to be placed, extending under the columns, and riveted to them, thus distributing the column load and thoroughly binding the whole mass.

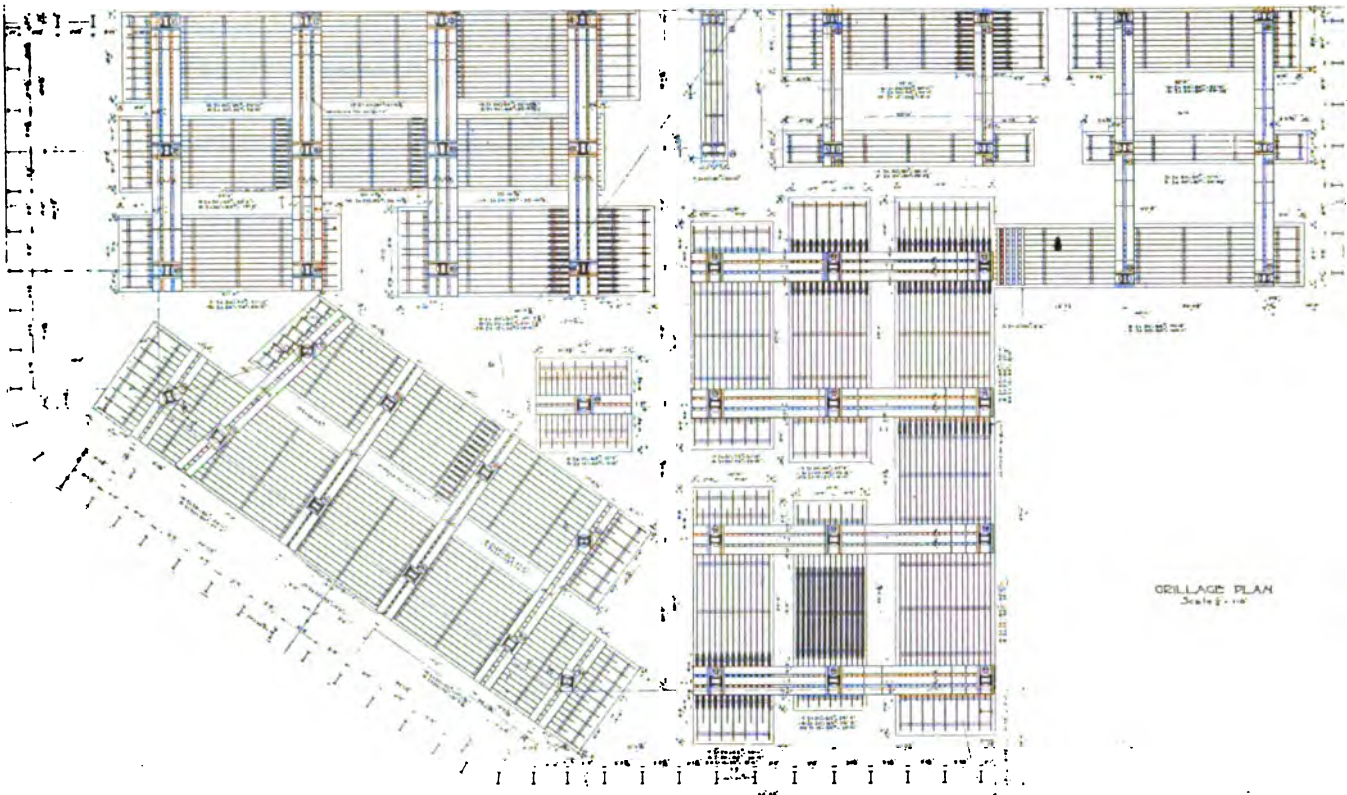
As the bottom of the grillage rests 32 feet below the curb level, it is believed to be deep enough to prevent its being undermined by subsequent neighboring excavations. The motive power of the large presses located in the basement is electricity and the presence of any

dampness in the foundation would carry this electricity to the steel in the grillage, causing electrolysis.

The weight of the larger printing presses is about one hundred tons each, and this weight will be supported on sand cushions, entirely isolated from the foundation. By this means it is expected that no vibration of the machinery will be communicated to the structure.

In providing for the mechanical equipment of the *Examiner*, which will be printed in this building, a base-

The first and second stories will be faced with pink Tennessee marble, thoroughly anchored to the reinforced concrete backing. The facing from this point to the sixteenth floor will be white glazed terra-cotta. Above this floor the terra-cotta facing will be poly-chromatic. Each individual piece of terra-cotta is thoroughly anchored to the reinforcement and backed with concrete, making it impossible to dislodge. The loggia extending through the seventeenth and eighteenth floors will give varying



ment and sub-basement will be necessary. This enables the raw material to enter below where the press drives are located and the finished product delivered above in a continuous process. To properly ventilate this basement and sub-basement, large electrically driven fans will provide fresh air heated to maintain an average temperature of 85 degrees.

These presses, together with all other mechanical features of the paper, will be in the annex, and isolated entirely from the office building.

In erecting a superstructure on this foundation of encased grillage the fundamental idea of the architects was to build a structure that would in a large degree possess the character of flexibility and that would rebound, in case of shock, to its original position without undue swaying or straining of the connections.

In the selection of the architectural treatment of the exterior, the idea of the architects was to perpetuate in the building the traditions and the character of the early Spanish settlers, who had evolved a more or less distinctive style of architecture, commonly known as "Mission style." This idea dominates the exterior treatment of the building.

Many considerations influenced the selection of the materials of the exterior walls: among them their fire-resisting qualities, color, durability, the ease of thoroughly securing it to the superstructure and also its availability.

deep shadows from the wide overhanging copper cornice, and together with the vari-colored terra-cotta introduced at this point, produces an effect artistic in its result and differing from the monotonous façade of the usual commercial building. The roof will be covered with huge copper tiles measuring 18 x 30 inches exposed surface, and the whole surmounted by a lantern balcony, built of terra-cotta and marble, with copper fleche, covered with gold leaf. In the lantern will be erected a clock with four dials, while in the arches of the lantern it is proposed to hang a chime of copper bells connected with the clock mechanism, thus carrying out the mission feature in an admirable way.

The main entrance to the building is located on Kearney street, and will lead directly to the elevator lobby. The walls of this lobby as well as the corridors will be faced with marble, the design calling for a pilaster treatment. Marble floors are provided, and richly decorated carton maché ceilings. All ceilings are designed to avoid dislodgment by shock.

The elevators and stairways are located practically in the centre of the building, in the angle formed by the court, thus utilizing what would be least desirable space for office purposes. The main floor is devoted to stores and also to the business and executive departments of the *Examiner*. From the street level to the top of the tower there will be twenty-two floors. A variety of subdivisions will be made on the different floors with the idea of supplying offices of varying sizes.

All the floors to the nineteenth will be subdivided for office purposes, above that floor they will be arranged as studios. The interior finish is to be Kalameined, with composition fire-proofed floors and sanitary bases throughout. The partitions will be built of steel studs, covered with wire cloth and plastered, making a hollow sound-proof partition which will admit the running of conduits. All window frames, door frames, doors and sash, are of metal over wood, as noted above, thus availing of one of the lessons taught by the fire. The main water supply is derived from large storage tanks on the roof. These tanks are served by electrically driven pumps connected with the city water service. In addition,

an artesian well in the sub-basement will furnish water in emergencies. To this well is to be connected a fire pump, supplying water to the stand pipes throughout the building.

The very full illustration presented in this issue enables the reader to form a most comprehensive idea of the importance of this building.

The engineering problems met and surmounted are admirably stated in the following article and will be read with interest by the profession.

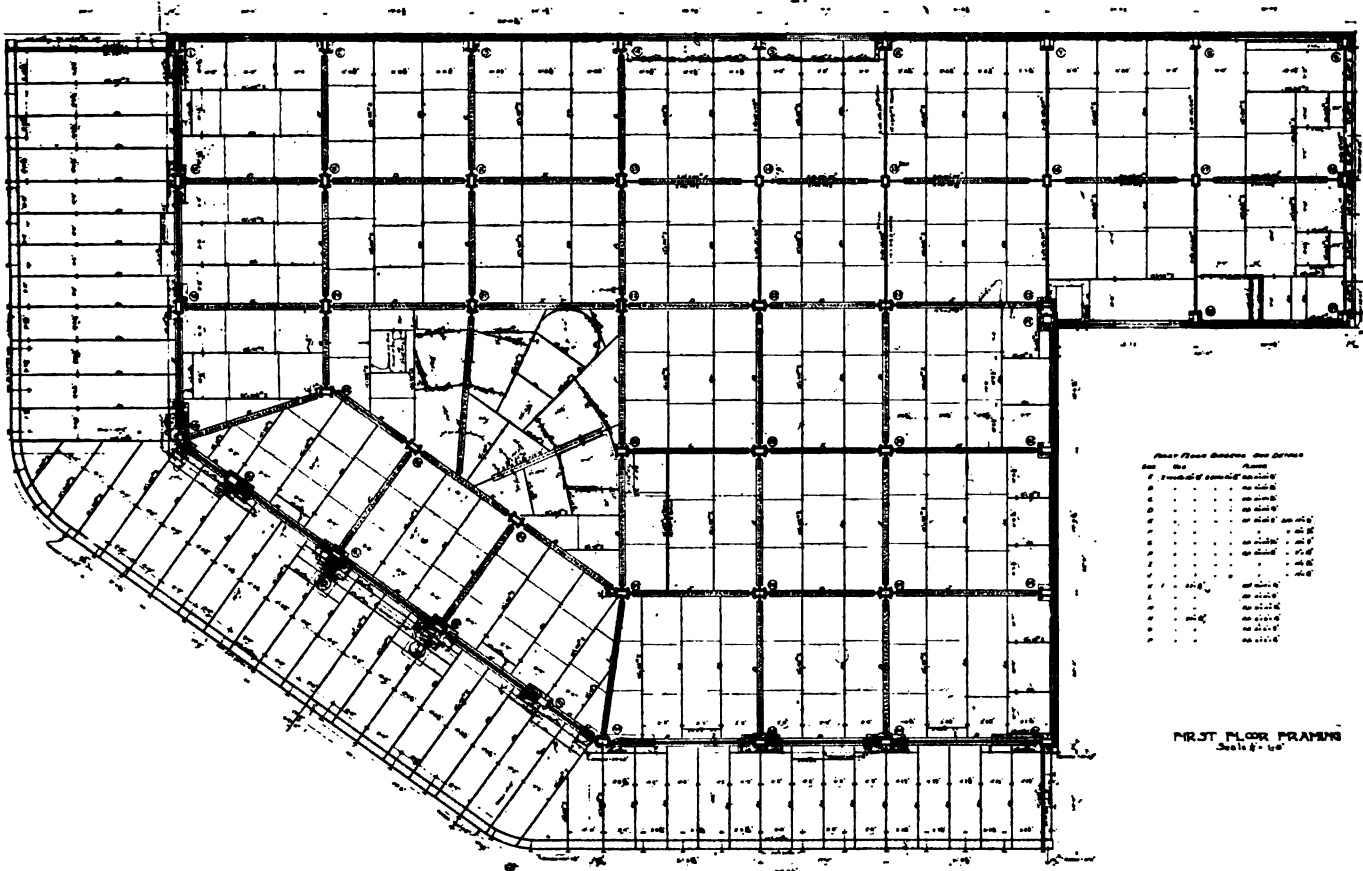
We are indebted to the architects, Messrs. Kirby, Pettit & Green, of this city, for affording us an opportunity to present this subject to our readers.

Engineering Features of the New Hearst Building, San Francisco, Cal.

THE building will be erected on the site of the old building, at the northeast corner of Market and Third streets, adjacent to the Monadnock Building, on the East.

The new building will be somewhat larger than the old one, additional land having been procured for this purpose. The extreme length and breadth are respectively 160 feet and 97 feet 6 inches.

will, at present, be built eight stories high, while provisions have been made for the addition of three more stories in the future. The base of the building will be faced with marble and the balance will be faced with terra cotta. All walls are to be backed up with stone concrete reinforced both horizontally and vertically by steel rods of suitable size firmly attached to the columns and wall girders. The object of the steel reinforcement is to

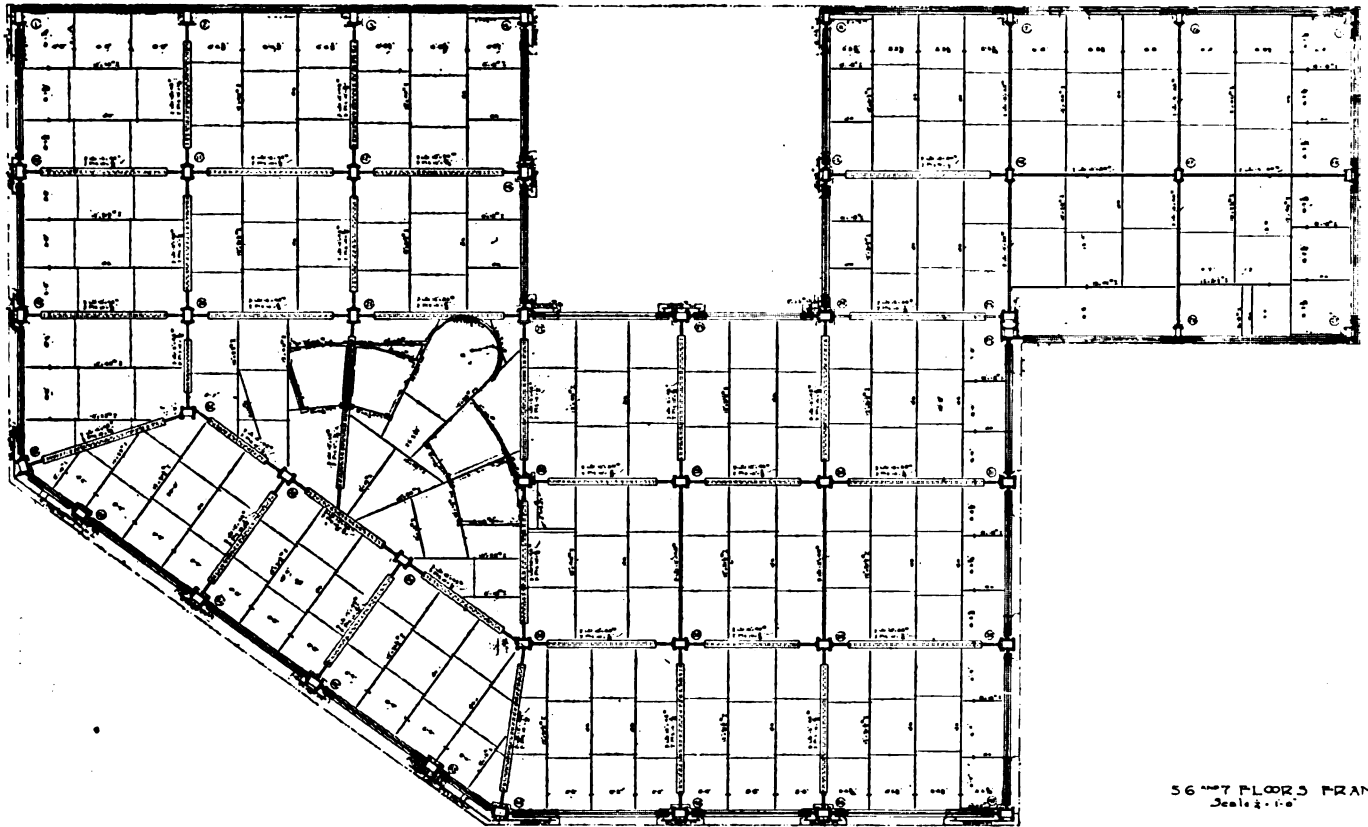


The main portion of the building will have eighteen full stories above the ground and twenty-two floors, exclusive of landings in the lantern above the tower. The so-called annex portion of the building, which fronts on Stephenson street, is 40 feet by 64 feet 5½ inches. It

prevent as much as possible the liability of the walls being cracked by future earthquakes. The steel frame is of the skeleton type, designed to support the walls as well as the floors. The floors will be fireproofed with reinforced stone concrete, cinders not being obtainable on the

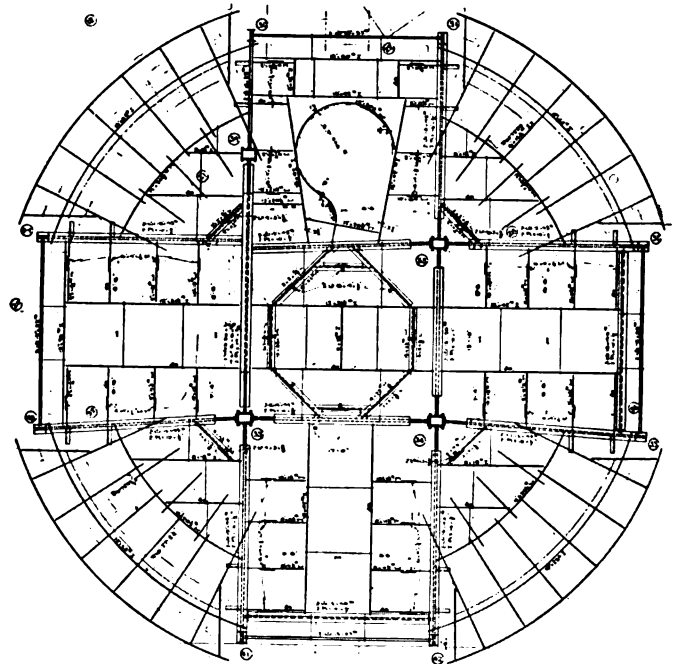
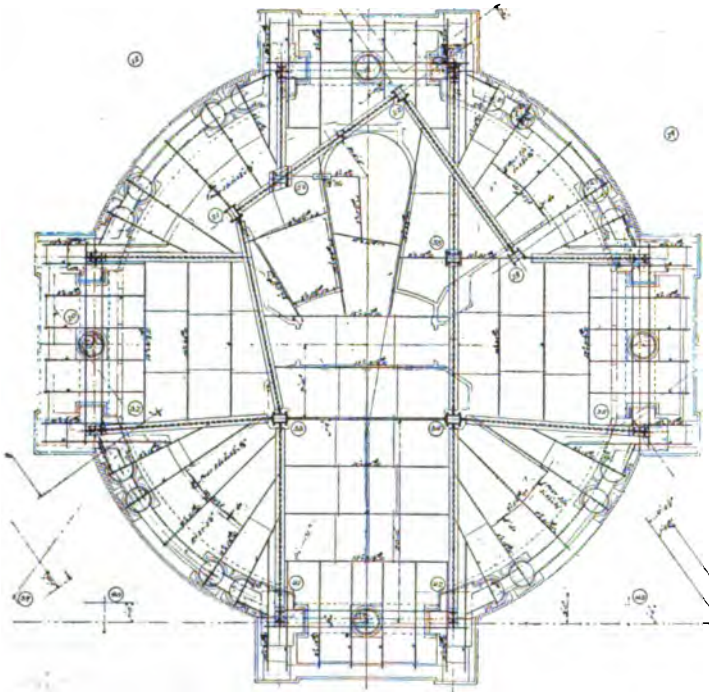
Pacific coast. All floors, excepting those in the basement will be of cement finish. The partitions will be constructed of steel studs wire lathed and plastered on both sides. The column protection will be of concrete, wire mesh and

in addition to the plastered ceiling. It will be noted that brick work and terra cotta fireproofing have been entirely eliminated. All doors, windows and trim will be Kalameined, thus avoiding any exposed woodwork.



plaster. The ceilings will be furred with metal and wire lath suspended from the bottom flanges of the

Test borings at the site of the building show the soil to be fine sand intermixed with a small amount of clay,



floor beams. Special precautions have been taken to liberally protect the structural steel work in every instance, the bottom flanges of the beams having protection

naturally deposited. Bedrock is at such a low level as to make it financially inadvisable to sink the foundations to that depth. For this reason, together with the favor-

able character of the existing soil, the steel grillage type of foundation has been adopted. Owing to the heavy loads to be sustained, necessitating huge cantilevers, and the danger of rupture from earthquakes, reinforced concrete foundations could not be considered.

The bottom of the excavation will be at the level of that of the adjacent building, 32 feet below the curb and about 8 below the ground water level.

The finished basement floor will be a few inches below the water level.

By inspection of the grillage plan, herewith reproduced, the arrangement of grillage beds and girders, so designed as to distribute the loads without eccentricity, may be noted. The allowable pressure on the soil has been taken at three and one-half tons per square foot. In most cases the distributing girders extend over two or more beds of grillage beams, which not only results in economy, but contributes largely to a more uniform settlement and incidentally serve as admirable ties to bind together the several footings.

The total load on the footings is in the neighborhood of 36,000 tons, which includes dead load and 60 per cent. of the live load on all floors. The loads on the individual columns in the main portion of the building range from 500 to 1,000 tons.

The retaining walls beneath the curbs are constructed of 20-inch steel beams placed vertically and filled between with concrete.

The waterproofing is placed beneath the grillage beams, and a sufficient weight of cement and sand is superimposed to resist the hydrostatic pressure of the ground water.

The framing plan of the first floor and that of the fifth, sixth and seventh floors, shown herewith, are typical of the construction up to and including the nineteenth floor. The framing of the sixteenth, seventeenth and eighteenth floors is modified to a considerable extent to meet the conditions imposed by the colonnade treatment in these stories. Many of the wall columns offset at the sixteenth floor line, necessitating special construction and the exercise of considerable study to fulfill both the structural and architectural requirements.

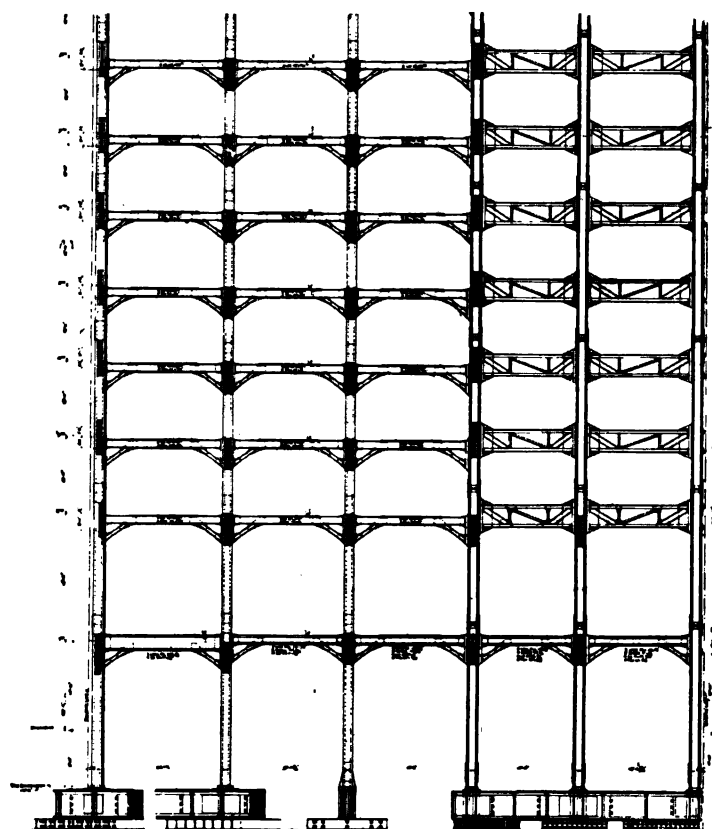
An attempt has been made to provide transverse bracing of sufficient strength to reduce to a minimum serious vibrations due to heavy winds and earthquakes.

Portal braces have been introduced between the columns in both directions, as shown on the plans, and in the transverse section. These braces serve the twofold purpose of acting as girders and resisting the transverse stresses due to the action of horizontal forces. They have been proportioned on the basis of a horizontal force of thirty pounds per square foot over the entire elevation of the longest side of the building, from the ground level to the top, and entirely independent of the resistance which is afforded by the walls and partitions. The resistance of the latter is relied upon as an additional security in the event of shocks from earthquakes. The wall girders are of the lattice type, so designed as to support the walls and their portion of the floor load, to serve as transverse braces and lintels over the windows, and to provide something substantial to which may be attached the cast iron mullions and panels between the windows. Lattice girders were selected in preference to solid web girders on account of being better suited to take a firm bond with the concrete protection, and the concrete backing of the walls in which they are buried. Dividing the total horizontal force above mentioned by

the number of bracial columns, it is found that the horizontal shear per column at the first floor level amounts to nine tons. The resulting moment of this force of nine tons into its lever arm 21 feet (half the sum of the basement and first story heights) equals 189 foot tons, which the transverse bracing of the first floor has been proportioned to resist in addition to the bending due to vertical loading.

The bending stresses induced in the columns by the actions of this shear have also been calculated, and the columns have been so designed that the combined stresses from the bending and direct loading do not exceed 12,000 pounds per square inch as required by the San Francisco building code.

The construction of the nineteenth tier is complicated and of necessity very heavy over the portion directly beneath the tower. The base walls of the tower are here caught up by various kinds of girders, which transfer the weight of the same to the columns. The entire



weight of the tower above the nineteenth floor is 1,600 tons, a portion of which is taken up by a few of the columns at the twentieth and twenty-first floor levels.

The construction of the tower is indeed that of a building by itself, planted on top of the main building, whose column layout could not possibly have been arranged to be symmetrical with the layout of the tower without more serious complications throughout the building below. The tower is surmounted by a lantern having steel framework filled with concrete and covered with copper. Above the lantern will be a modern steel flagpole 40 feet high.

The structural plans of the tower, shown herewith, are interesting as an illustration of how the fulfillment of the collated conditions necessarily prevents symmetrical construction.

CHAS. H. NICHOLS, C. E.
Eng'r for Kirby, Petit & Green.

THE AMERICAN ARCHITECT

AND
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THE problems of the skyscraper have confronted architects in the larger cities of this country for the past fifteen or twenty years, and while those relating to the mechanical and structural features of these buildings have been solved in a manner generally satisfactory, the solution of the purely architectural problem has seemed in many instances to leave something still to be desired. The great difficulty occasioned by the almost invariable disproportion of breadth to height can hardly be said to have been entirely overcome by the "columnar" treatment, which has probably been more frequently employed as a general scheme of design than any other.

WHAT may perhaps prove to be the ultimate solution of the problem, and what at least seems to remove the great difficulty mentioned above, is the new "trust" or "community" plan put in operation to a marked extent in New York during the past year. Under this plan a number of holdings are combined into one large plot and improved by one operation. Dignity of proportion can thus be obtained in the structure without sacrificing any of the possibilities of the site.

THE operation of this plan seems to indicate in a measure one or the other of two forms as the ultimate skyscraper. The first, that of grouping two buildings so as to balance each other, and thus diminish the disproportion of breadth to height, has been chosen in two or three instances, and has attracted much attention. The second form is that of a huge structure extending over a block or more, the main mass rising some dozen or fifteen stories and surmounted by an immense

tower or campanile, of a height proportionate with its base line. This type surely offers great opportunities for dignity of proportion, after which little difficulty in design or decorative treatment need be anticipated.

ANYONE who has read the daily papers published throughout the United States during the past few weeks can hardly have failed to note the unusual amount of space given up to the subject of building code revision. From New York to Seattle and from Springfield, Mass., to the Gulf, the question of revising the ordinances under which buildings are erected is apparently the topic of the hour.

IN all probability the causes for this unusual interest and activity are manifold, but chief among them we believe are the present day uses of certain materials of construction not contemplated when the existing building laws were enacted. Consider, for example, the modern uses of reinforced concrete. Few if any of the building ordinances adopted five years ago dealt adequately with this subject and the vast majority failed to mention it. The extent to which reinforced concrete is now being used, and the very apparent future possibilities of this material, as well as its no less apparent limitations, demand not only recognition in a comprehensive building code, but authoritative treatment. It is not improbable that a further cause, influencing some centres of population to enact more restrictive laws designed to direct and control building operations, may be found in certain building disasters of comparatively recent occurrence, which have been given the widest publicity.

BUT whatever the causes, the effect will be, we believe, on the whole gratifying, for "revision" used in the present sense should spell improvement, and when once well started a movement of this kind can hardly fail to result in a general betterment of buildings throughout the country. It seems unfortunate, however, that under existing laws the matter of general building regulations is left, with few exceptions, for each city to determine for itself according to its lights. The code resulting from the operation of this system is ordinarily far from ideal. For example, in a code recently adopted by a city of 75,000 inhabitants, we find a particular kind of paint definitely required for all fire escapes, while matters of construction are left largely to the discretion of the Commissioner of Buildings. The same code provides that violations shall be punishable by a fine of not more than twenty dollars. Surely the most reckless and daring will be deterred by the prospect of such distressing consequences.

IF some scheme could be devised whereby uniform requirements were established for buildings of various classes erected within certain geographical boundaries, it would appear to be in every way desirable. Something analogous to this plan is found in operation to a limited extent in the case of the National Board of Fire Underwriters exercising jurisdiction over electrical installations throughout the country. If equitable laws could be drafted and enacted it would seem that a Board or Commission clothed with supervisory powers could be relied upon for their enforcement.

AS this is being written the windows of THE AMERICAN ARCHITECT offices are partly obscured by smoke emanating from the ruins of the Parker Building, on the corner of Nineteenth street and Fourth avenue. This twelve-story building, popularly supposed to be fireproof, has the appearance of being substantially a wreck, although it is too early to speak definitely or to direct attention to any of the lessons that may be taught by a future examination of the ruins. The builder is reported to have gone on record promptly as follows:

"The building was what might be termed a semi-fireproof structure, with steel frame and hollow tile between floor beams, but with wood floors and window frames. At the time it was built it was regarded as practically fireproof. There was a great deal of combustible material in it, but the fact that the walls and fireproof columns are still standing in good shape is pretty good proof that the building was well put together."

We shall endeavor in a future issue to report somewhat in detail on the results of this conflagration.

The Artistic Use of Steel and Reinforced Concrete

By C. HOWARD WALKER.

(Concluded)

"The position of ornament in reinforced-concrete is not different from that of any articulated structure, but there are larger interstices, that is, larger surfaces of non-supporting wall; therefore, it is not inconsistent that these surfaces, if ornamented at all, should be more generally ornamented than in stone buildings. But there is no necessity or object in suggesting clasps, straps, bolt heads, and other small metal details in the covering of the metal. Nor is there any object in making the ornament thin and tenuous because of that quality in the skeleton. A man with small bones need not have slits for eyes and mouth.

"The general effect of reinforced-concrete structure is that of lightness, of delicacy. Its mouldings and ornament should correspond in character. The chief problem is to prevent an effect that is trivial, and that lacks stability. The only method by which slender structure and delicate detail can be made vigorous is by contrast of simple surfaces with massed detail. In this case the simple surfaces are over the structural factors and the curtain walls, and the massed detail is associated with the openings, and possibly with the cornice. Wrought metal grilles and balconies, elaborate fenestration, polychromy and surface modeling (both focused) all afford opportunities for the embellishment of a system of structure which is devoid of large piers, deep reveals and heavy shadows. All are in accord with such structure, and it is unnecessary to search for more sensational factors of expression. A reinforced building is very apt to express itself tolerably well if none of the architectural detail applied to it is in imitation of stone, brick or wood forms, if its metal ornament is wrought and its concrete ornament plastic, or mosaic, or painting. It presents but one new problem, that of making a thin thing as attractive as one with mass. As a matter of fact, solidity of mass enters largely into our feeling of permanency and stability, and it is probable that no large skeleton structure can ever compete with one having liberal third dimensions. Its character is that of lightness which has always been associated with impermanency, but that quality accepted, as it needs must be, much can be done to make it attractive without inventing combinations of forms which are un-

called for, and which in themselves have no intrinsic value.

"One of the constant criticisms of Roman architecture by instructors in architectural design is that the orders were used by the Romans merely as an ornament applied to the face of the construction. Partly engaged columns and pilasters which are not needed to indicate piers are among the examples cited of this solecism in design. Steel and concrete structure can, however, be well expressed in this manner, the engaged column often following literally the support within it, and the entablatures indicating the deep girders. It is of course unnecessary that either the caps or the mouldings of the entablatures follow classical or other precedent, excellent opportunity being afforded for variants suggested by the relative proportions of beams to lintels, and of both to the façade. Original capitals especially may be suggested by the bracketed forms at the tops of vertical supports, and may be of as simple geometric type as are many of the Mohammedan Capitals. The sole reason that well-known styles are cited in connection with the possible treatment of steel and concrete forms is as a means of explanation of the character of the forms which may naturally be developed from the structure.

"The design and ornamentation of the interiors of steel and concrete structures, in which the steel is covered, is not unlike that of any structure of columns, slender piers and beams.

"In the cases which at times occur where protection from fire does not demand that steel structure shall be covered, and in which exposed steel is largely in excess of accessory concrete, the problem of artistic treatment becomes of a different character. Such structures are armory and large hall arched trusses, bridge spans, etc., i. e., either straight or curved trussed beams. These are especially interesting in elevated railway structures and elsewhere, where they are so frequently and continuously conspicuous where they are in this country so persistently made utilitarian only, with but little attention paid to the possibility of subtle line. This is all the more to be deplored from the fact that metal, if scientifically related in its form to strain and stress, takes naturally some of the most delicate and subtle curves possible, but the custom, because material is cheaper than labor, is to erect structures assembled of straight lines only, with the occasional use of curved lower members. This is the principal reason for the apparent crudeness of steel structures. They are articulated structures, built up of component parts bolted together. The interstices are larger in area than the factors of structure and the structure has, therefore, a latticed, cobweb effect. Its satisfactory appearance depends entirely upon the design of the cobweb.

"The lines of the main factors of the trusses can have the spring and curve which are so characteristic of metal under pressure, while the minor factors of struts, rods, braces, etc., may be assembled so that certain combinations repeat, and others indicate, design and their silhouettes may be studied. For a steel truss structure, inside its main lines, is effective by its silhouettes alone. In many cases the mere multiplicity of parts is detrimental to scale; the perpetual crossing and recrossing of lines being more suggestive of wreck than of safety. So much is this the case in parallel bridge trusses that covering the structure or filling the interstices of the two outside

trusses is at times advisable to give apparent stability to the span.

"Accessory ornament upon a steel exposed structure is merely either to accent or develop long, continuous lines, or to introduce spots to create harmonious scale throughout. Certainly the punctuated accent of bolt heads does neither the one nor the other.

"The introduction of color into concrete structures is worthy of careful consideration. Any general tinting of the concrete is naturally light in tone, but apart from the insertion or incrustation of other colored materials, whether mosaic or glass, marbles, or clay glazed or unglazed products, presents an opportunity for interesting design. The concrete surface, however, being without joints, and giving no indication of thickness, does not seem capable of carrying large blocks of material embedded in it, and colored designs are best, of assembled small factors. The Cosmati work and the borders of Byzantine panels are suggestive in this respect, as being veneer patterns in satisfactory scale. Concrete, stucco, and plaster covering has received many varieties of successful treatment in the past, the most satisfactory being that in which large surfaces of the concrete were contrasted with brilliant coloristic detail. The main contention of this paper is that the æsthetic treatment of steel and concrete is not one that necessitates strange and bizarre forms or detail, but one that recognizes lack of shadow and delicacy of proportion of structure to areas."

Antique Furniture and Modern Furnishings

A WRITER in a contemporary magazine, referring to the collecting of old furniture, wittily sums up the subject by stating that, judging by the amount of furniture claimed to have been brought over seas in the *Mayflower*, the pilgrim ship must have been about the tonnage of the *Lusitania*.

Certain it is that most of the so-called antique furniture prized by many collectors is not old, and therefore not genuinely antique. That most models of old pieces have the charm of artistic lines is true, and many makers of furniture have exactly copied these examples in mahogany and oak.

In an equally skillful manner they have imitated all the marks of old age and of hand-wrought pieces. No period of an hundred or more years ago could have supplied even a small proportion of the furniture now claimed for it. As a matter of fact, it was only the wealthier class that could afford the luxury of many pieces, such as are prized so highly to-day, and these, if not entirely destroyed through wear and lack of care, are mostly prized by the descendants of the original owners.

Nothing so appeals to the cupidity of the dishonest dealer in so-called "antiques" as this traffic in antique furniture. In our search for illustrative material for this paper, this fad has been forcibly brought to notice. In many houses visited we have been shown by their proud possessors much of this spurious "antique furniture," the worthlessness of which was evident to the critical eye.

A writer on old English oaken furniture states that, as a matter of fact, the people of the middle age had very little furniture even among the rich classes. He writes: "So scanty seems to have been the appointments of many households that tables and chairs, and even glazed window casements were carried about by wealthy travelers from place to place for purposes of comfort."

In spite of this well-authenticated condition, one may find throughout the length and breadth of England to-day, and in many places in America, so many pieces claimed to be genuine antiques, that were they really so, even the poorest people of the middle ages in England must have been put to it to have found room in their dwellings for all this vast amount of furniture that has survived the ravages of time, to which must be added an equally large quantity doubtless destroyed.

The often inappropriate placing of antique furniture in modern houses, regardless of the accompanying decorative features, suggests the inharmonious furnishing of interiors so often noticed.

We have been frequently told by architects to whom we have applied for material, that the effect of the interior of certain houses had been ruined by the poor taste shown in the furnishings. One house in particular, a most beautiful example of the colonial, and views of the exterior of which with its details formed the illustrations for almost an entire issue of *THE AMERICAN ARCHITECT*, was an instance of this tendency to overfurnish interiors.

The architect was one whose work is everywhere known for its dignity and purity of line. The interior was as good as the exterior, but the effect was almost entirely spoiled by the poor taste displayed by the owner in selecting his furnishings. Furniture of many periods was recklessly strewn about the place; the pictures, a bad lot in themselves, were poorly framed, and the mantel in the drawing-room, one of the best modern colonial mantels we have ever seen, was covered with an elaborate lambrequin, and its shelf was a receptacle for many hundreds of dollars' worth of clock and ornaments. In several years' search for good material, this condition has been noted so many times as to almost cease to incite comment.

COMMUNICATION

December 21, 1907.

To the Editor of *THE AMERICAN ARCHITECT*.

Dear Sir—Please allow me to call your attention to an evident typographical error in the report of the recent dinner of the New York Society of Beaux Arts Architects. In the December issue of your paper you credited me with having stated at the dinner referred to, that Mr. Parsons was one of the original members of the Senate Park Commission of Washington, D. C. Mr. Parsons name was not mentioned by me on that occasion. The Park Commission, as you probably know, was originally composed of Messrs. McKim, Burnham, Olmstead, and the late Augustus St. Gaudens.

In the same notice my statement relative to the real estate values on Pennsylvania Avenue, as quoted, is misleading. What I said was that some of those opposed to the Park Commission's plans, pretended to see in the opening of the vista on the Mall and the placing of Government buildings thereon, only an attempt to lessen the importance of Pennsylvania avenue with a consequent possible depreciation of the real estate values thereon.

Trusting that you will be able to make the corrections indicated, and thanking you for so doing, I remain,

Yours very sincerely,

PERCY ASH, Sec'y.

THE AMERICAN ARCHITECT

AND

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Vol. XCIII.

SATURDAY, JANUARY 25, 1908.

No. 1674.



Public School Buildings in the City of New York

By C. B. J. SNYDER, F. A. I. A., Superintendent of School Buildings,
Board of Education, New York

PART I



THE total enrollment of pupils in the public schools of the City of New York is given as upwards of six hundred and twenty thousand, who are housed in five hundred and ninety-four buildings, forty-eight of which are leased. The annual increase in school enrollment is from twenty-three to thirty-six thousand, in which increase immigration forms a very important factor.

For some years the city steadily outgrew its school accommodations, as owing to lack of funds and other reasons equally cogent it was impossible to carry fully

into effect the plans which were made to provide enough new school buildings each year to care for the natural increase and for a goodly proportion of the pupils there receiving only part time instructions owing to the overcrowding of the schools in the neighborhood of their homes.

Both the pedagogical and the physical care of the public schools are under the direct control of the Board of Education, consisting of forty-six members, serving without pay, who are appointed by the Mayor in ac-

cordance with the City Charter, which prescribes the number to be selected from each of the five boroughs into which the city is divided.

The various working committees of the Board are appointed by its president; the Committee on Buildings consisting of nine members, having direct control of the Building Bureau with its force of clerks, draughtsmen, and inspectors.

The chief of this bureau, under the charter, must be an architect or an engineer in good standing, and is the executive officer of the board in respect to all matters relating to the bureau, and is charged with the preparation of plans and specifications and the supervision of all work on the buildings under control of the board.

Funds for the construction and equipment of new buildings and additions, as well as for the purchase of sites, are provided by the issue of corporate stock, under authority granted by the Board of Estimate and Apportionment and the Board of Aldermen.

During the year 1906 alone, upwards of ten millions of dollars were thus provided with which to meet the contracts let during that year by the Building Bureau.

Thus we have, on the one hand, the yearly requirement that provision shall be made for housing the thousands of new school children, and on the other hand the enormous sums required therefor.

The growth of the city seems to lie along two distinct and entirely dissimilar lines; the first being the rebuilding of the older portions where the old single family houses have given place to flats and tenements, housing from four to twenty families each with the consequent enormous increase in land values, and the second, in the outlying sections where the farms have been cut up into building lots, with the usual development of one and two family houses, although here and there the transformation from a cabbage patch to four-story tenements within twelve months is not uncommon.

Thus there are serious problems, the most important of which, especially in the older portions of the city where land values are greatest, often being in excess of \$12 per square foot, is that of economy in planning so that every inch of available surface may be utilized to its fullest extent.

Long and careful investigation, extending to the schools of France and Germany, caused the writer to reach the conclusion that there was a tendency in this country to construct classrooms of too great an area for the accommodation of a given number of pupils, resulting in poor lighting in other than corner rooms, greater expense in construction and undue strain on the voice of the teacher.

Especially unnecessary were the larger rooms found to be where there was also provided a gymnasium or an assembly room or both. This study and investigation was prompted by the belief that the enormous problem which confronted the educational authorities of this city could be successfully solved in no other way than by treating it purely as a commercial proposition, and while the writers on school house construction varied some 50 per cent. in the estimated size of school rooms for a given number of children, yet experiment proved most conclusively that under nearly all conditions the 660 square feet per room allotted by some of the German authorities was ample and there was no material gain

by increasing the area to 950 square feet, or, as in some cases, even more.

It has been found further that even the area of 660 feet may at times be reduced and still satisfactory results be obtained.

The lower easterly side of the old City of New York has suffered more than any other portion from overcrowding, notwithstanding the fact that several new schools, seating from 2,000 to 4,000 pupils each, have been built in this district each year, until there is one on almost every other block, and yet others are needed.

This increase in population has arisen from the replacement of the old one and two story houses with those of five and six stories before referred to with a corresponding increase in land values until the purchase of a school site involved such an enormous outlay for land alone that the erection of a ten story school house was seriously contemplated, and undoubtedly would have been carried out had not the opening of one of the new bridges across the East River reduced somewhat the congestion.

A school site selected about this time in this section, having a frontage of 200 feet and extending back 200 feet on one street and seventy-five feet on the other, cost the city through condemnation proceedings the sum of \$572,000, exclusive of one lot of the site already owned by it.

The requirements were for a building to provide for about four thousand pupils, also for a large assembly room, two gymnasiums and other necessary features, it being for both boys and girls.

Plates 1 and 2 show this building, known as Public School 62, but do not indicate the fact that the foundations thereof go down some 28 feet below the street level. The heating and ventilating apparatus occupies the sub-basement, which is under only a portion of the building, and also a part of the basement, the balance being devoted to a large assembly room which with its gallery, which is placed at about the level of the street, will seat approximately 1,600 pupils, and is used also for evening lectures delivered to the citizens of the neighborhood.

The first story, aside from the space used for the assembly room, is left open as an indoor recreation space, while on each of the four floors above there are twenty classrooms, together with toilets for teachers and pupils. The sixth story with its splendidly lighted spaces by means of the peculiar roof construction, which does not show from the front, is utilized for classrooms, gymnasiums, manual training and domestic science rooms.

Four elevators and eight stairways are provided, so arranged that the building may be vacated by its 4,000 occupants, using the stairways alone, in two minutes and forty seconds.

This, as well as all other of our school buildings, even including those two stories in height, are of fireproof construction throughout, and a description of the materials used in P. S. 62, will apply in nearly every other case as well.

The floor construction is usually of segmental terra cotta blocks, or some form of reinforced concrete construction, none of the flat arch systems however being used. Level ceilings are secured by the use of channel iron furring attached to the beams by special clips, upon which is secured one of the several standard types of metal lath.

The stairways are all of steel with cut stone or asphalt treads, and are enclosed from bottom to top with partitions on the corridor side made of wire glass set in steel frames, access being had to each landing by means of fireproof doors, all fitted with automatic check and spring. What we term a double stairway is used almost exclusively, the height of each story from floor to ceiling being 14 feet 3 inches, to which is added the thickness of the floor construction of about 1 foot 3 inches, affording sufficient head room to obtain a platform at an equal distance between floors.

This arrangement of stairways permits of a great saving in floor space, and, while quite confusing to a stranger, is highly appreciated by the teacher, who finds in them the certainty of easy and complete control of the pupils, and the pupils themselves quickly realize the fact that in these stairways lies perfect safety from the perils of fire, smoke, or overcrowding.

The first story being used for an indoor playroom is paved with rock asphalt and the walls wainscoted with glazed brick to the height of 5 feet 6 inches, the space above together with the ceilings being finished in hard white plaster.

The interior trim of this building is of ash, the specifications being drawn so as to permit the builder to use either oak, ash, cherry or birch, as he may elect, it having been found that the city many times reaps a substantial advantage in thus permitting the builder to take advantage of the market.

This principle is carried out also in the specifications for the stairways where the builder may use either North River bluestone or asphalt for treads, also in the use of second quality white enameled or a salt-glazed brick for the wainscot of playrooms and side walls of outside toilets, and also in such other materials as will permit of securing goods promptly and not tie the builder to one particular dealer.

Extreme difficulty, however, has been experienced in applying this principle of open competition to hardware, and after many trials of different schemes to bring the hardware men all to precisely the same standard of weights, material and workmanship, resort has been had to the drawing of specifications having for the principal elements that of weights and dimensions as presenting the only solution of the problem.

All wardrobes are placed at the corridor side of and communicate directly with the classroom so as to have the clothing immediately under the eye of the teacher.

A steam coil is placed along the base so as to dry the clothing when damp, this source of heat being also an aid in the ventilation of the wardrobe, which is sometimes accomplished through the wall into the corridor and again into special flues.

All of the corridor, storeroom and toilet room floors, are finished with rock asphalt, a durable, sanitary and cheap material, but altogether unsightly. No good substitute has, however, been found for less than three times its cost.

Dust chutes are provided at each end of the building leading to fireproof bins in the basement, which are connected with a flue so that if the contents should become ignited the smoke would be carried off without entering the building.

The cost of the building was as follows:

SCHOOL 62. BOROUGH MANHATTAN. YEAR 1903

Total accommodation, 4,250. Cubic contents, 1,918,000. Area second floor, 22,439.

Number classrooms, 104. Cubic feet per classroom, 18,442.3 Area classrooms, second floor, 14,014, equals 62.5 per cent.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost Per Cubic Foot	Cost Per Pupil	Cost Per Classroom
Building.....	\$518,000	.822	.270	\$121.88	\$4,980.77
Heating.....	54,293	.086	.028	12.78	522.05
Sanitary.....	38,666	.061	.020	9.09	371.79
Electric.....	19,560	.031	.010	4.60	188.07
Elevators, not installed.....	.....	.....	.....	.....	.....
Totals.....	\$630,519	1.000	.328	\$148.35	\$6,062.68

Remarks.—Duplicate sub-basement. Auditorium with gallery not subdivided. Four large elevator shafts. Only one classroom unit on first floor nineteen units given to gymnasium, lockers, baths, cooking, shop and offices

Plate 3, that of Public School 38, Clark, Dominick & Broome streets, is in that section of the lower west side of the town where the rebuilding has but more recently taken place. On the opposite corner at the right of the school may be seen some of the old houses typical of this entire neighborhood, while at the left and close up to the school walls is the first of a row of ten-family tenements.

The old school building is directly opposite, and when the new one was planned with its fifty-three classrooms, more than double the number of those in the old, it was believed that care should be taken of the increase in school population of this neighborhood for several years to come.

The speculative builders of tenements, however, carried their operations to such an extent, using the size of the new school as an argument, that although it has been open only a year, it as well as the old building is filled.

Naturally this has a tendency to very largely increase the taxable values of the neighborhood and as such is a paying investment for the city.

This increase in values, due to the active operations of builders soon after a new school is started in a neighborhood, is evidenced in almost every case, there being instances where such increase has been upwards of 300 per cent. in two years.

The question of an outdoor playground is a serious one in such cases as that represented in Plate 3, where the tenements at the right and left extend back along the rear of the school wall to within twenty feet of each other, rendering the rear of the school premises dark if set off for an outside yard. The difficulty is met by enclosing the entire area of the lot on the first story and using it for an assembly room and indoor playroom, while the actual outdoor play space is on the roof of the main building where an abundance of light and air may be had.

The cost of Public School 38 was as follows:

SCHOOL 38. BOROUGH MANHATTAN. YEAR 1904-1905.

Total accommodation, 2,500. Cubic contents, 1,447,254. Area second floor, 15,560.

Number classrooms, 53. Cubic feet per classroom, 27,307. Area classrooms, second floor, 8,928, equals 57.4 per cent.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost Per Cubic Foot	Cost Per Pupil	Cost Per Classroom
Building.....	\$305,000	.793	.211	\$122.0	\$5,735.0
Heating.....	35,250	.092	.024	14.1	665.1
Sanitary.....	32,489	.084	.023	13.0	613.0
Electric.....	11,775	.031	.008	4.7	222.1
Totals.....	\$384,514	1.000	.266	\$153.8	\$7,235.1

Remarks.—Roof playground.

Plate 4. The Morris High School is unfortunately placed upon a street only forty feet in width, the plot having been selected for a small high school, but owing to delays caused by the revision of the city charter and other matters, the final orders were for a building to care for at least 2,500 students, and neither change nor enlargement of the site was possible.

The principal dimensions of the building are frontage 312 feet, depth of wings 104 feet, height of tower 179 feet.

The assembly room shown in Figs. 5, 6, 7 and 8, is placed at the rear, so as to be easily accessible for the general public for lectures and other purposes.

The cost of building was as follows:

MORRIS HIGH SCHOOL. BOROUGH BRONX. YEAR 1900.

Total accommodation, 2,630. Cubic contents, 2,670,500. Area, second floor, 22,430. Area classrooms, second floor, 10,360, equals 46.2 per cent.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost Per Cubic Foot	Cost Per Pupil
Building.....	\$467,483	.780	.175	\$177.75
Heating.....	49,447	.083	.018	18.80
Sanitary.....	37,445	.063	.014	14.24
Electric.....	28,886	.040	.011	10.98
Elevators.....	9,000	.016	.003	3.42
Totals.....	\$592,261	1.000	.221	\$225.10

Remarks.—Sub-basement, rock excavation. Auditorium extension. Large tower.

17 units devoted to offices, library, lecture rooms, lockers.

14 units in gymnasiums, providing for 5 classes. = Loss 9.

16 laboratories, 12 = Loss 4.

TOTAL 30 units not providing accommodations.

Plate 11.—The Stuyvesant High School occupies a plot on Fifteenth street, near First avenue, and running through to Sixteenth street.

The requirements were for a manual training high school of the most advanced type.

It has therefore been planned with the shops on one street and the class of section rooms on the other (see Plate 12), these two portions being connected by a central corridor upon each side of which are the laboratories.

This leaves two large, light courts at the foot of which are the assembly rooms and gymnasiums, as shown in Plates 13 and 14.

This permitted of a complete separation of the shops from the balance of the building and simplified the floor framing, as that covering the shops is built to carry 300 pounds live load per square foot, excepting in the foundry, where it was increased to 600 pounds to the square foot. The floor systems for the balance of the building are designed to carry not more than 75 pounds live load per square foot.

The floor arches for the shops are of concrete—broken stone, sand and Portland cement—while 6-inch segmental terra-cotta arches are used elsewhere in the building.

The equipment is not complete at this writing, but while the general construction cost was only about 18½ cents per cubic foot, with a cubical displacement of 3,291,650 cubic feet, yet the equipment consisting of high power boilers, electric generators (in duplicate, one set being operated by a steam turbine and the other by a 125 horsepower reciprocating engine), iron and brass foundry or molding room, forge rooms, machine shops, pattern-making shop, wood turning, etc., will bring the cost per capita to rather a high figure.

(To be continued)

The Parker Building Fire

WHILE architects and engineers may be interested to a limited extent in the origin of a fire in a modern skeleton frame building, especially if there is a suspicion that it may have originated from defective electrical installation, improperly constructed flues, or other faulty details of the mechanical equipment, for the successful and safe operation of which they feel in a measure responsible, their chief interest from a professional standpoint is in studying the effects of the fire and endeavoring to account for them in a manner compatible with their preconceived theories of fireproof construction. In the case of the Parker Building fire in New York the task of accounting for the injury sustained presents little difficulties. Whether the fire started in the lower or upper stories is not apparent, for with few exceptions all inflammable materials have been consumed by the fire from basement to roof, and the walls, partitions, floor arches, and skeleton show about the same degree of injury in all stories.

The building occupies a site at the southeast corner of Nineteenth Street and Fourth Avenue, about 150 feet on the street and 120 feet on the avenue, with a court about 40 feet by 40 feet covering the rear inside corner of the plot about the second floor.

It belongs properly to the type of buildings known as lofts, with large undivided areas on various floors. The exterior walls of the building are constructed of limestone in the lower story, with brick and terra-cotta

above, and from a more or less casual examination they appear to be in comparatively good condition. A few terra-cotta lintels are burned away, and brick jambs and mullions are spalled and disintegrated in some few instances, while practically the entire façade is very much discolored by smoke and flames; but none of these injuries are beyond repair at a comparatively small cost.

Upon entering the building, however, an entirely different aspect is presented. Near the corner of the court, resting upon the basement floor and extending in height well up into the first story, is a huge mass of twisted beams, broken columns, terra-cotta blocks and mortar, resulting from a collapse of the floors from basement to roof, over an area approximately 30 feet by 40 feet in extent. A further examination disclosed a failure in the upper stories, allowing an area of the roof approximately 40 feet by 60 feet, together with a similar area of the twelfth floor to collapse and rest on the eleventh floor. In a like manner the roof over the first story extension at the bottom of the court, has fallen and is supported by the first floor. In trying to account for these failures of the frame work an examination of the form of construction was made. The columns used were of cast iron ranging in size from about 14 inches or 16 inches in diameter in the basement to 8 inches in the twelfth or top story. The framing of a typical bay is shown in Fig. 1, the 15-inch girders extending east and west, while the 12-inch floor beams running north and south carried the

flat terra-cotta floor arches between them. It will be noted that the centre panel in each bay is six feet wide, an arrangement probably made to reduce the bending moment on the girders.



VIEW ON FIRST FLOOR, LOOKING EAST.

The direct cause of failure of the skeleton framework in each instance seemed to be the breaking of a column and the consequent collapse of the portion of the floor carried by the column in each story. It was impossible to determine from an examination whether, in the case of the column that had broken from basement to roof, the initial failure had taken place in the lower stories, thus leaving the upper floors without support, or had occurred in one of the upper stories, and the weight of the structure above falling on the next floor had crushed through it and the floors below successively to the basement. Likewise the cause of the column's failure was not apparent. It is possible that the fireproofing was displaced by a falling piece of machinery and the exposed column became greatly heated, after which a stream of water was directed against it, causing the cast iron to fracture. Or it may be that a falling safe or printing press was deflected against the column in some story with sufficient force to displace it.

The fireproofing of the columns consisted of terra-cotta blocks about 1 inch or 1¼ inches thick provided with vertical ribs about ¾ inches high on the inside to insure an air space between the column and the covering. In the majority of cases where the columns were still standing, the fireproofing was intact, although in a number of instances it had been knocked off apparently by some weight falling against the column.

In examining the floor system a number of interesting facts were noted. The first was a matter of framing and

consisted of connecting the 12-inch beams in the centre of the 15-inch girders, thus avoiding the expense of coping the floor beams, but leaving the bottom flange of the girders projecting 1½ inches below the beams. When the arch blocks were placed they projected below the beams to a depth bringing them approximately flush with the girder flanges, and the ceilings were plastered level. In this process the girder flanges were covered with plaster, but without metal lath being first wrapped around the flange to furnish a clinch for the mortar. As a result the flanges are practically bare, the plaster having dropped off wherever the flames touched it.

A second important fact noted in connection with the floor system was the depth of the flat terra-cotta arches. These were but eight inches deep, although practically one-third of them were six feet span as shown by the framing of the typical bay. The weight of the floor construction was materially increased by a cinder fill on top of the arches of a depth to finish flush with the tops of the beams. That these arches were of insufficient depth is very evident. They have dropped out in many places throughout the building, but in the vast majority of cases this has occurred in the six foot spans. In some instances the arches have dropped out leaving the wood floor and sleepers in place uninjured over the opening left by the fallen arch. Apparently the shock of falling debris has driven the arch out from beneath the wood floor while the floor possesses sufficient strength to support the load after the arch has fallen. A considerable damage was done to the floor arches by the falling of



VIEW ON FIRST FLOOR, LOOKING SOUTH.

safes. The practice of blocking up safes with wood to distribute the load proved disastrous, for the woodwork under one side almost invariably burned away first, and

caused the safe to tip over, and ordinarily, unless the safe happened to fall upon a beam, it broke through the frail arches and continued down to the basement. It is



VIEW FROM ELEVENTH FLOOR.

not improbable that one or more of the unfortunate firemen who lost their lives at this fire were struck by one of these falling safes.

So far the defects noted might be termed faulty construction or misuse of materials, but what appeared to be a serious defect in the terra-cotta arches themselves was observed in numerous places. It took the form of broken blocks, the lower slabs of the arch blocks in some cases including the vertical webs up to half the depth of the blocks, having dropped off. This had occurred where injury was apparently due entirely to the action of the fire, and not to water having been turned onto the ceiling while hot.

The partitions enclosing the elevator halls were built of three-inch terra-cotta blocks, as were also some of the few partitions in the building. The numerous and extensive openings in these partitions were framed with heavy wooden bucks, and all doors, casings, baseboards, etc., were of wood. These partitions, with such a quantity of inflammable material entering into their construction, offered but little obstruction to the fire. Indeed there were numerous partitions built entirely of wood, while others were of wood studding covered with plaster boards and plaster. The wood frames and sash throughout the building also furnished considerable fuel.

The elevator shafts were enclosed with terra-cotta partition blocks, but the doorways were merely protected with iron grille doors, offering no obstacle to the free communication of the fire from story to story. The walls of the shaft were bulged and broken. The stairs

were of iron with slate treads, and although the fire was hot enough to consume the hand rails in most cases, the stairs are still passable. Some slate is slivered and cracked, but without the supporting iron plate now required by the New York code, the treads withstood the heat without crumbling.

To recapitulate:—The exterior walls are not very seriously damaged.

All woodwork of every kind and description, including glass and plastering, is a total loss.

Practically all heating, plumbing, and electrical work is ruined, although probably some piping can be saved, and possibly the boilers.

The fireproofing is in such condition that it would appear to be unsafe to allow any of it to remain.

The elevators are probably a total loss.

The condition of the skeleton frame can be seen from the cuts shown herewith.

While there are columns and beams undoubtedly in as good condition as ever, there are numerous girders sagged and distorted, aside from the large number that went down with the failing columns and were twisted out of all semblance of structural shapes. To reclaim the skeleton will require months of work, and the replacing of a considerable portion of the steel and iron.

Taken all in all there seems to be no reason for any disappointment in the results of this fire, disastrous as they have proven to be. If the building had been built in accordance with the best practice, if the columns had

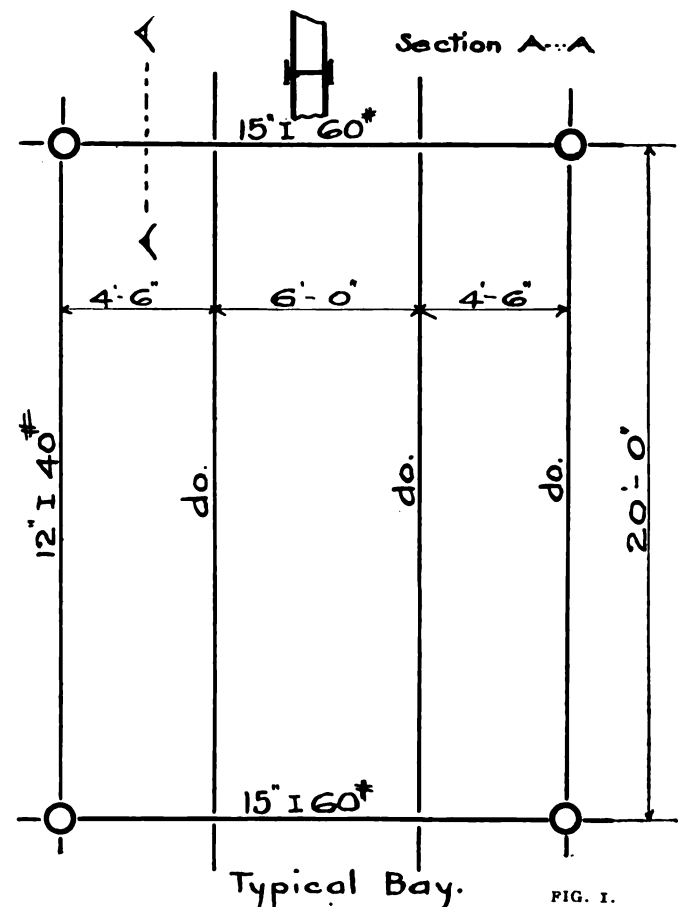


FIG. 1.

been of steel and properly fireproofed, if the girders had been protected, if floor arches of sufficient depth had been furnished, if partitions had been fireproof, if eleva-

tor shafts and stair halls had been closed and fireproof, if trim had been kalameined, and glass wired, if a sprinkler system had been installed and in working order, and then a disastrous fire had wrecked the building, even though the fire department had failed to render assis-

Widening of Fifth Avenue

IN Mayor McClellan's message addressed to the New York Board of Aldermen under date of January 6, 1908, attention is again called to the matter of widening Fifth Avenue from Twenty-third Street north as far as the present congestion of traffic exists. Explaining in detail what this will amount to, the mayor writes:

"By such widening I mean the removal of all obstructions and encroachments beyond the building line, the curtailment of the outer line of the sidewalks by about seven and one-half feet on either side of the avenue, and the consequent enlargement of the roadway by about fifteen feet."

Referring to the part taken in this plan by New York architects the message reads:

"The New York Chapter of the American Institute of Architects has appointed a committee to consider the question as to how far cornices or other ornamental work in the upper stories of the buildings should be allowed in order to preserve the architectural effect. This committee has made a report as to what in their views would be sufficient for the purpose without interfering with the use of the sidewalks."

THROUGH the courtesy of Mr. Carrère, chairman of the committee referred to, we publish below the recommendations made to the New York Chapter A. I. A.

1st. That purely ornamental projections, such as balconies, moldings, pilasters, cornices, etc., shall be permitted when occurring twelve feet or more above the sidewalk level, provided, however, that they do not contain any floor space which is enclosed or roofed over.

2nd. That non-supporting ornamental columns or pilasters may project not to exceed two feet beyond the building line in the lower story of the building, provided that the wall surfaces, whether glass or masonry, between the same, set back an amount at least equal to the projection of the column or pilaster, and provided that the sidewalk shall be extended in to the said wall surface, either continuing the level of the sidewalk or stepping up not more than eight inches.

3rd. Steps which are not continuous and which lead either up or down at entrances, provided they do not exceed (whether taken together or separately) one-fifth the width of the lot, may project two feet beyond the building line.

4th. No area shall be allowed to project beyond the building line excepting where covered with iron gratings, provided, however, that the gratings do not extend more than two feet beyond the building line.

5th. The base course of the building, including the water table, provided it does not exceed three feet in height above the sidewalk, may project not to exceed ten inches beyond the building line.

6th. Any moldings or ornamentation of a decorative character, not including, however, rustications when occurring on the lower floor of the building, may project not to exceed ten inches beyond the building line.

7th. In the case of rustications, the face of the rustication shall not project beyond the building line, excepting that vertical lines of rustication, when treated as quoins, may be considered as moldings.

IT will be noted that some difference exists between the recommendations made by the committee, to which we referred in a previous issue without quotation, and the work as indicated by Mayor McClellan.

The New Campanile of St. Marks, Venice

JUST when the new campanile of St. Marks' at Venice will be finished is conjecture, but the fact that it now rises fifty-four feet above the plaza, a height only

tance, we would indeed be apprehensive as to the safety of our modern skyscrapers; but with all these things lacking in the Parker Building the results of a fire could not reasonably have been expected to prove less serious than our examination has shown them to be.

reached in almost two years since the laying of the corner-stone, indicates a remote day for its completion.

The preparation for the foundation alone consumed almost a year, as the engineering problems to be solved before a firm base for the new structure was secured were many and intricate.

Certain it is, that the traveller who knows his Venice well, and who on later visits has missed this beautiful feature of the Venetian sky-line, or who has mourned over the ruins of the original tower as they lay strewn about the plaza, will be gratified to learn that progress is making in this restoration. Not progress, perhaps, in the sense of other and more energetic people, but progress none the less, and perhaps surer and better, because slower.

Alden House to be Saved

THE Alden Kindred Association of America has purchased for \$200 the picturesque old homestead of John and Priscilla Alden in Duxbury. The house was erected in 1653. It will be repaired and improved and perpetuated as a memorial to the famous Mayflower Pilgrims.

The place was sold under a foreclosure of outstanding mortgages originally held by Frank and John Alden, direct descendants of John and Priscilla Alden.

All the characteristics of the early builders are shown in the Alden house. It is seemingly erected around a great central chimney and displays the plain rectangular lines of Puritan architecture, with shingles rather than clapboards covering the unpainted walls, and small windows instead of panes.

Never in the 250 years and more that have elapsed since the homestead was constructed has it passed out of the hands of direct descendants of its builders.

ILLUSTRATIONS

PART I. PUBLIC SCHOOL BUILDINGS OF THE CITY OF NEW YORK. MR. C. B. J. SNYDER, ARCHITECT. PUBLIC SCHOOL NO. 62. PUBLIC SCHOOL NO. 38. THE MORRIS HIGH SCHOOL. THE STUYVESANT HIGH SCHOOL.

Additional Illustrations in the International Edition.

FRANCIS I. MANTEL AND FIREPLACE: CHATEAU DE CHENONCEAUX, FRANCE.

FRANCIS I. MANTEL AND FIREPLACE: PALAIS DE FONTAINEBLEAU.

Announcement

AFTER this issue, the publication day of THE AMERICAN ARCHITECT will be Wednesday, instead of Saturday, as heretofore. The next issue will be on Wednesday, January 29, in which will appear Part II of New York City Public Schools.

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Lessons of the Parker Building Fire.—The Boyertown, Pa., Opera House Fire.—Theatres in the Public Schools.	

THE recent disastrous fire in the Parker Building in New York (to which we referred briefly in our last issue), entailing heavy loss of property, causing serious interruptions to surface road and subway traffic, and costing the lives of three firemen, has brought the fire-resisting qualities of the skyscraper again into question. That incalculable injury to the cause of modern fireproof construction will be done by the sensational press, and the no less sensational public, using the mere fact of a so-called fireproof building having been in a measure destroyed by fire as a proof of their inefficiency, there can be little doubt. That this distrust and injury is warranted or deserved, there is the gravest doubt. The Parker Building did not represent even approximately the modern up-to-date type of skyscraper. A large amount of wood was used in the construction and trim, and the structural members were inadequately protected. Elevator shafts, stairways, and corridors were not enclosed in fireproof walls or partitions. In short very few of even the well-known and generally considered indispensable features of a fireproof structure were incorporated in this building. In addition, it was filled with vast quantities of inflammable materials. But even under all these adverse conditions it would seem that had it not been for inadequate water pressure, inability on the part of the firemen to operate two of the water towers, and the inferior quality of the hose, the building would still be intact. Fire tests in the better constructed skyscrapers are not lacking, and the results of these tests are such as to lead to no uncertain conclusion. In San

Francisco, in Baltimore, and in more than one instance in New York, buildings of this type have withstood fiercer fires than that which wrecked the Parker Building. The larger cities of this country cannot afford to abandon the erection of tall buildings, and the need of their doing so is not apparent. That they can be made fireproof there is abundant evidence, and fire-fighting means must be devised to protect their inflammable contents.

IT would seem almost a reflection on human intelligence to suggest that anyone who had ever entered the recently destroyed "opera house" at Boyertown, Pa., had failed to realize that the building was lacking every requisite for safety, and yet it is probable that no one had ever made complaint or done aught to avert the appalling consequences invited by that lack. It is a curious and incomprehensible truth that the human mind seems to require ocular demonstration of what might almost be considered self-evident facts before accepting them. The demonstration in this instance has carried desolation into hundreds of homes, but it has served to arouse other communities throughout the land to a realization of their danger, and a tardy investigation has been started in scores of villages where conditions are undoubtedly very similar to those at Boyertown. Everyone knew that the narrow stairs, lack of exits, oil lamps, and inflammable scenery common to the majority of village theatres was a menace, just as everyone knew that urban theatres were unsafe before the disastrous Iroquois fire, but until the whole country is shocked by some appalling disaster the public is indifferent to the danger. It required the Slocum holocaust to direct attention to the conditions prevalent on excursion steamers everywhere, and not until after the Parker Building fire had occurred was any notice taken of the deficiencies in the equipment of New York's Fire Department or had the well-known faults in the Parker Building type of construction received more than casual attention.

THE ever-increasing demands of our national system of free education, are admirably illustrated by a comparison of the modern school buildings with those of even twenty-five years ago. How far these demands, and the consequent development of this most important of educational adjuncts, the school building, will extend, it is impossible to foresee, but certain it is that every year adds to its already complicated requirements. Probably the latest innovation is the reported plan to include a theatre, equipped with stage, footlights and scenery, among the departments of the proposed Washington Irving High School in New York. While undoubtedly the scope of our public school system is susceptible of extension in many directions, and much might be said in favor of an educational theatre, it is a debatable question, whether public money would be invested in a manner securing the greatest benefit to the greatest number by the addition of this feature. Under present conditions, with the school population in nearly every city of the country increasing so rapidly that accommodations for the pupils in the lower grades are lacking, and with the cost of buildings constantly becoming greater it would seem as though there might be strong opposition to extending the curriculum to include instruction in histrionic art.

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AND

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No. 1675.



PART II

Public School Buildings in the City of New York

By C. B. J. SNYDER, F.A.I.A., Superintendent of School Buildings, Board of Education, New York.

The following is in continuation of Mr. Snyder's very interesting article on New York Schools. Schools in the Boroughs of Brooklyn, Bronx and Richmond will be equally well described and illustrated in the near future.

THE De Witt Clinton High School, Plate 18, covers solidly the block of 200 feet front on Tenth avenue, between Fifty-eighth and Fifty-ninth streets, by 200 feet in depth, and was designed for 3,000 students.

This is an example of the application of the commercial idea in the erection of a high school, for while outdoor space for recreation is desirable in a building of this character, it is not essential, and has therefore not been provided for.

The basement is devoted to a gymnasium 60 x 140 feet, the necessary lockers, shower and dressing rooms, teachers' lunch room, storerooms, etc., also the lower floor of the assembly room, which, with its gallery and platform, seats 2,250 people. The entrance is through the foyer shown in plate 16, which is on a level with the gallery

floor, Fig. 5. The lighting of the room is by skylights in the bottom of the court facing the front, the effect being as shown in Plate 17, where the two historical pictures depicting events in the life of De Witt Clinton and the arrangement of the platform and organ are clearly shown.

The cost of the building was as follows:

SCHOOL D. W. C. H. S. BOROUGH MANHATTAN. YEAR 1903-1905
Total accommodation, 2,835. Cubic contents, 3,650,967. Area, second floor, 29,515. Area classrooms, second floor, 16,800.

VARIOUS CONTRACTS	Contract Price	Per Cent Total Cost	Cost Per Cubic Feet	Cost Per Pupil
Building.....	\$650,400	.802	.178	\$220.4
Heating.....	50,864	.074	.016	21.1
Sanitary.....	49,174	.062	.013	17.3
Electric.....	37,658	.046	.012	13.3
Elevators.....	12,633	.016	.003	4.5
Totals.....	\$800,720	1.000	.222	285.6

Plate 19. The Wadleigh High School, on 114th and 115th streets, near Seventh avenue, is built on a plot of ground near the centre of the block and running through

from street to street. It was therefore planned of the H type, the courtyard on the front being devoted to trees and flowers, while a portion of the central or courtyard space at the rear contains the assembly room, with en-

Plate 24. Public School 165, on 109th street, near Broadway, is of the H type, as the plot is in the centre of the block running through from street to street.

Tenements have been built solidly up against it on

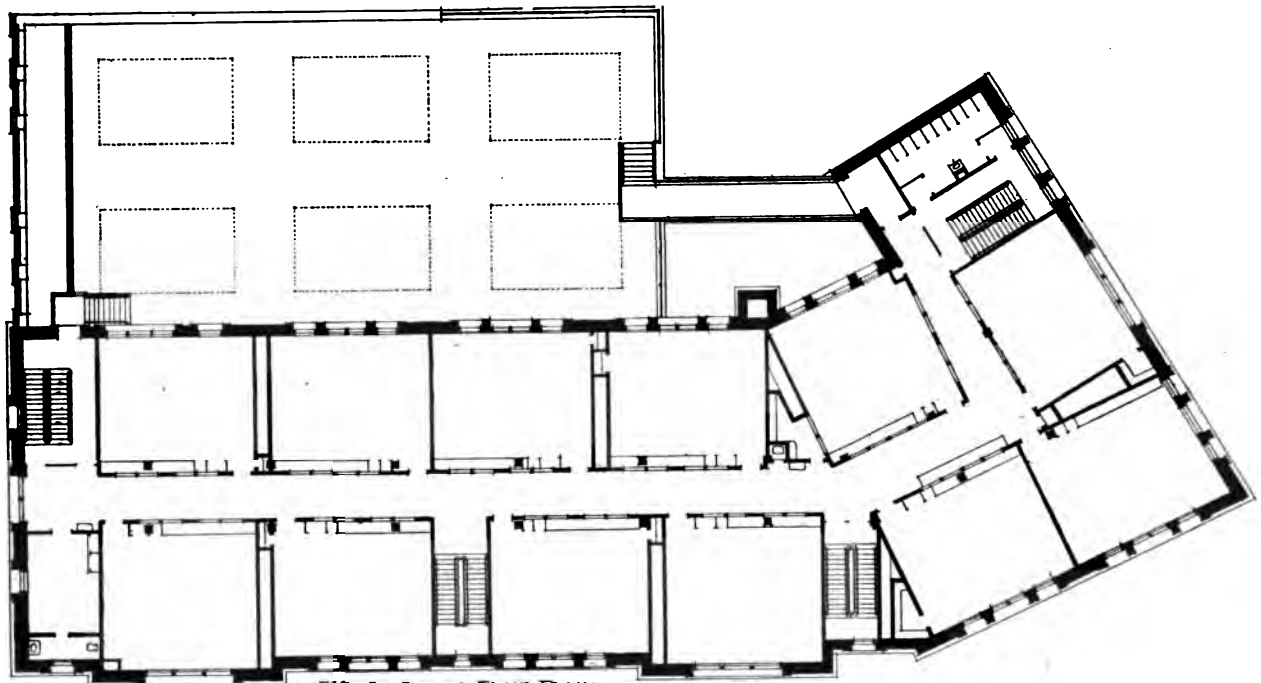


FIG. 1. - SECOND FLOOR PLAN -
-Public School 165 - Manhattan-

trances (Plate 20) directly from 115th street for the use of the public.

The cost of this building was substantially the same as that given for the Morris High School.

Plate 22. Public School 31 (formerly P. S. 167), at

each street, but owing to the plan whereby the light for the classroom is received direct from the court fronting the street and formed on the school premises, there is no interference therewith.

The building accommodates 3,100 pupils and was built

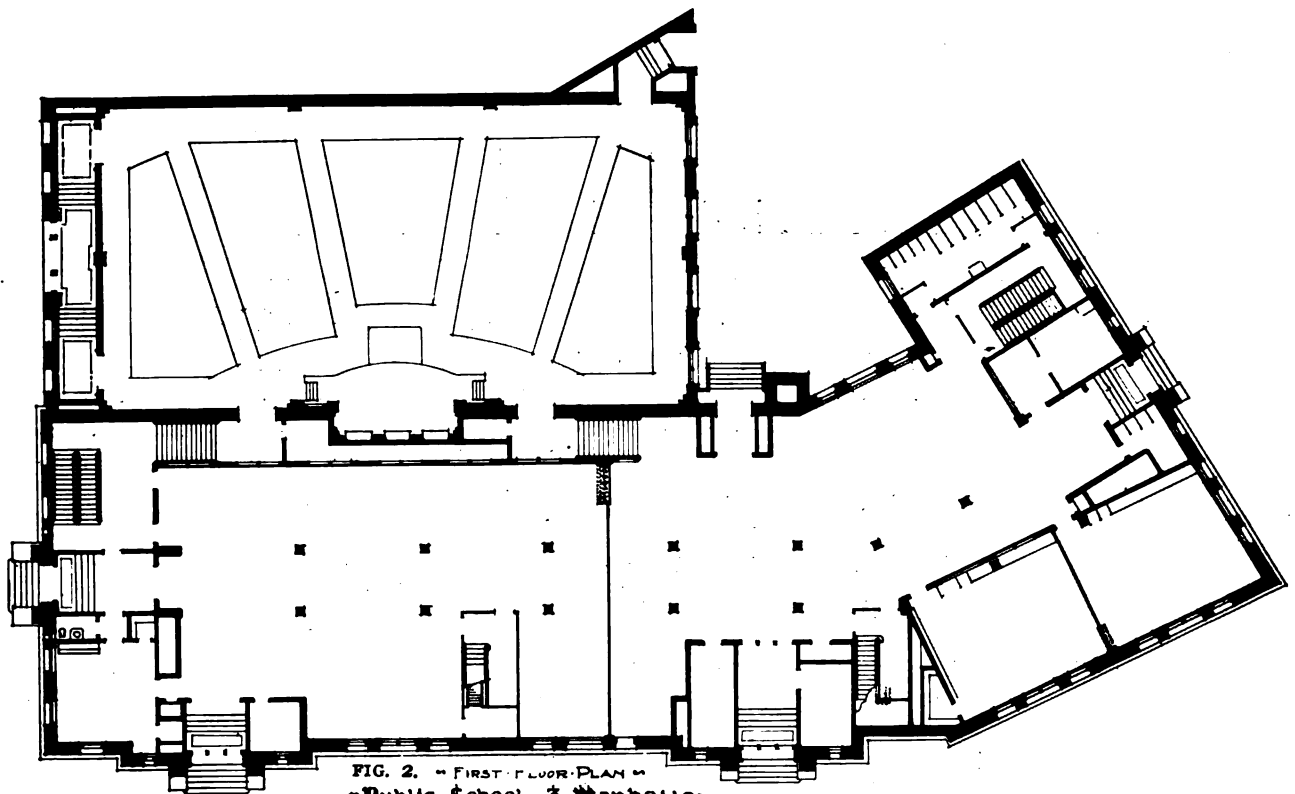


FIG. 2. - FIRST FLOOR PLAN -
-Public School 31 - Manhattan-

144th street and Morris avenue, the Bronx, is one of several of this type, erected at about the same time (1898), wherein is given the maximum amount of light.

The cost was as per table at end.

in two sections at different times and under adverse conditions and the cost thereof is therefore of little use for comparative purposes.

Plate 27. Public School 3, Hudson and Grove streets,

replaces the one that was over fifty years old and burned in 1905.

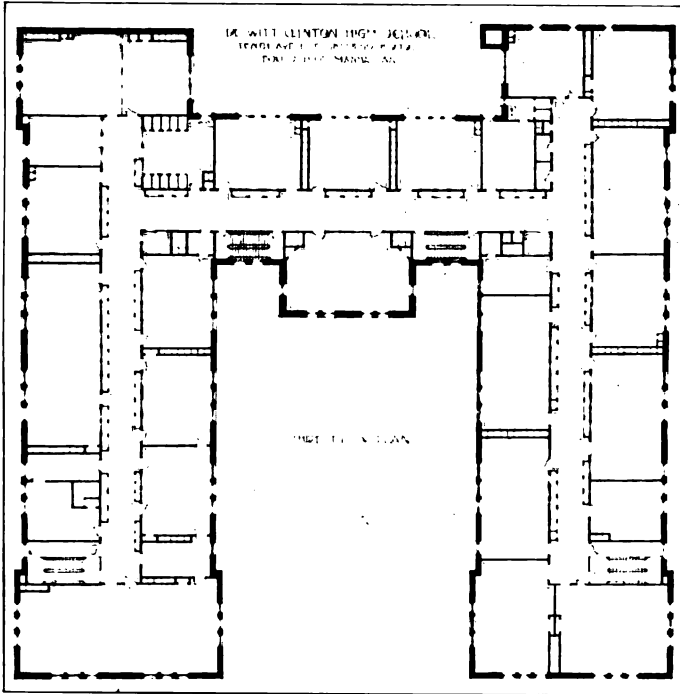


FIG. 4.

The plans for the new building were started on the morning after the fire and completed in record time. The number of classrooms in the new structure is nearly 50 per cent. greater than in the old. There was not sufficient space for an assembly room without its being used also for classroom purposes, and as it is the policy of the School Board to avoid this it was decided to place it on property to be acquired adjacent to the school (see Figs. 1 and 2) and which will be carried out very shortly. The cost of the building was as per table at end.

Fig. 13. Public School 21, on Mott Street, extending through to Elizabeth Street, was a problem most difficult of solution since a large portion of the plot was occupied by an old school in which the pupils had to be cared for until a portion of the new structure was made ready, thus making two distinct building operations at a largely increased cost.

There was no space to spare so the assembly room was placed beneath the courtyard with entrances direct from

the street for use by the public at evening lectures.

This does not interfere with the use of the yard for recreation purposes. The cost of the building is as per table at end.

Plate 14 is one of several school buildings erected under the approach of the Williamsburg Bridge in the

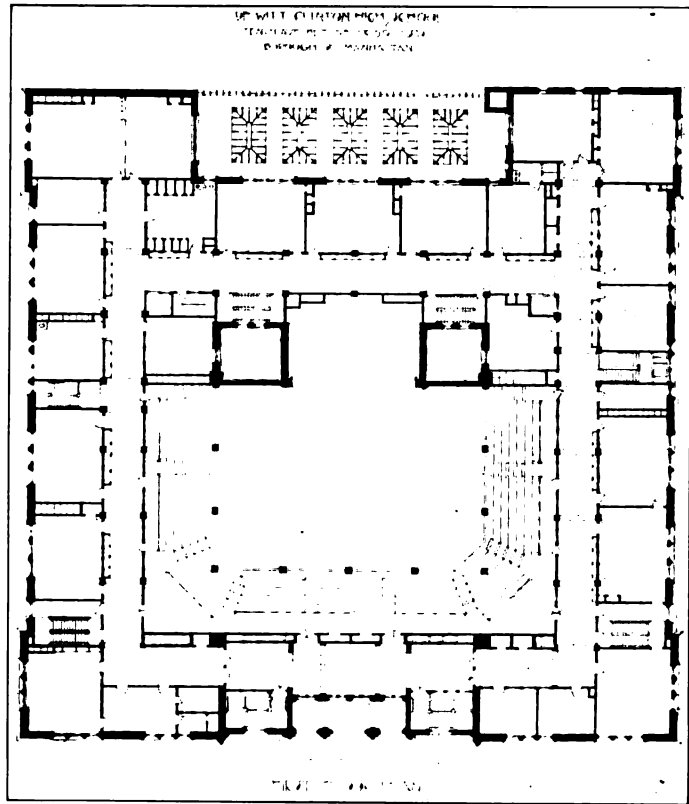


FIG. 5.



FIG. 6.

endeavor to utilize land already owned by the city in a neighborhood where values range from \$10 to \$14 per square foot. The noise from the traffic of the bridge, however, is so great that the experiment will scarcely be repeated, although the pupils and teachers have gradually become accustomed to it.

The ventilation of school buildings crowded in upon plots surrounded by towering tene-

ments is rather a complex problem. The many differences in the plans due to the varying size and conditions of school sites requires that a special study of the heating and ventilation shall be made in each case.

One type is shown in Public School 66 in East Eighty-eighth street, near First avenue, Figs. 7 and 8, where a plot 175 feet front by 100 feet in depth (less 5 feet re-

through to the rear line, with small indoor playroom for boys and girls. The fresh air intakes are placed at the rear with the openings on the second story window sill

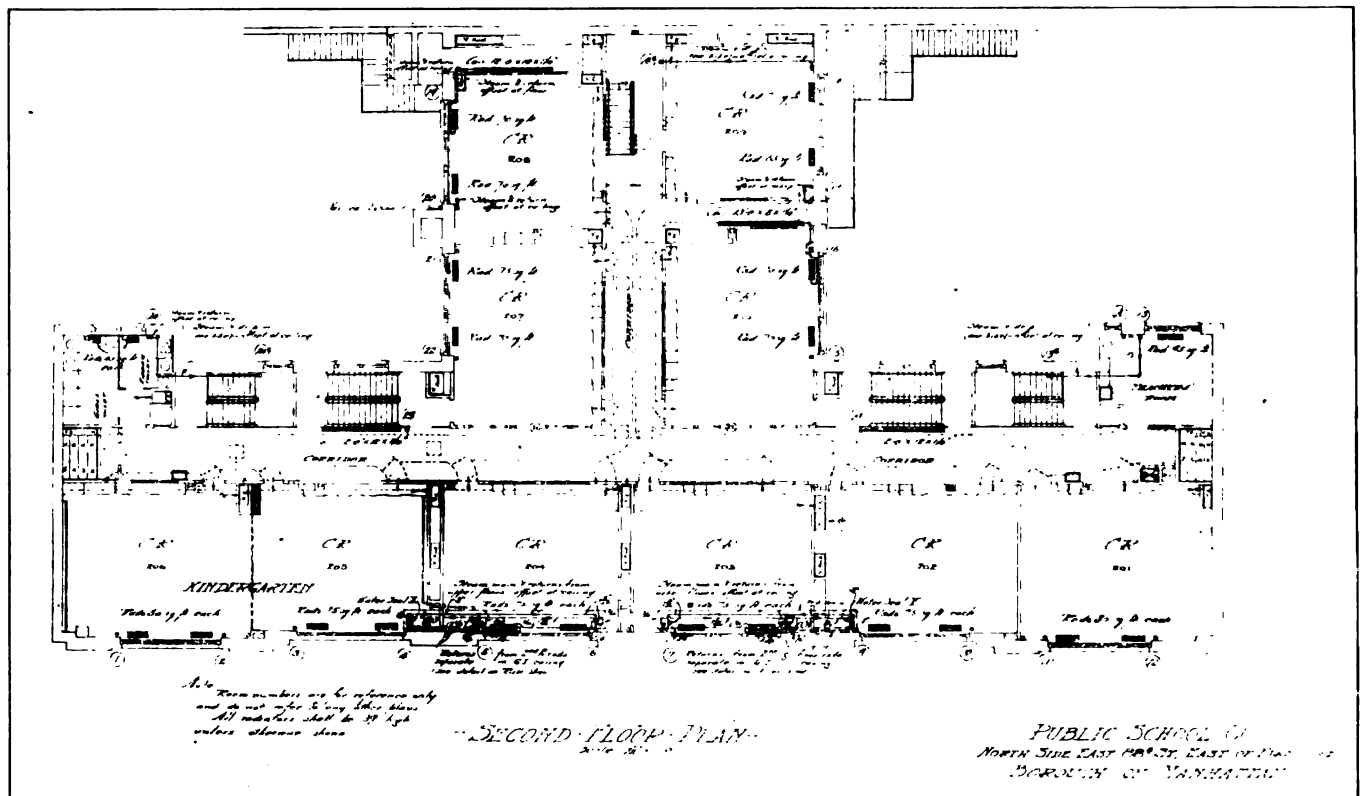


FIG. 7.

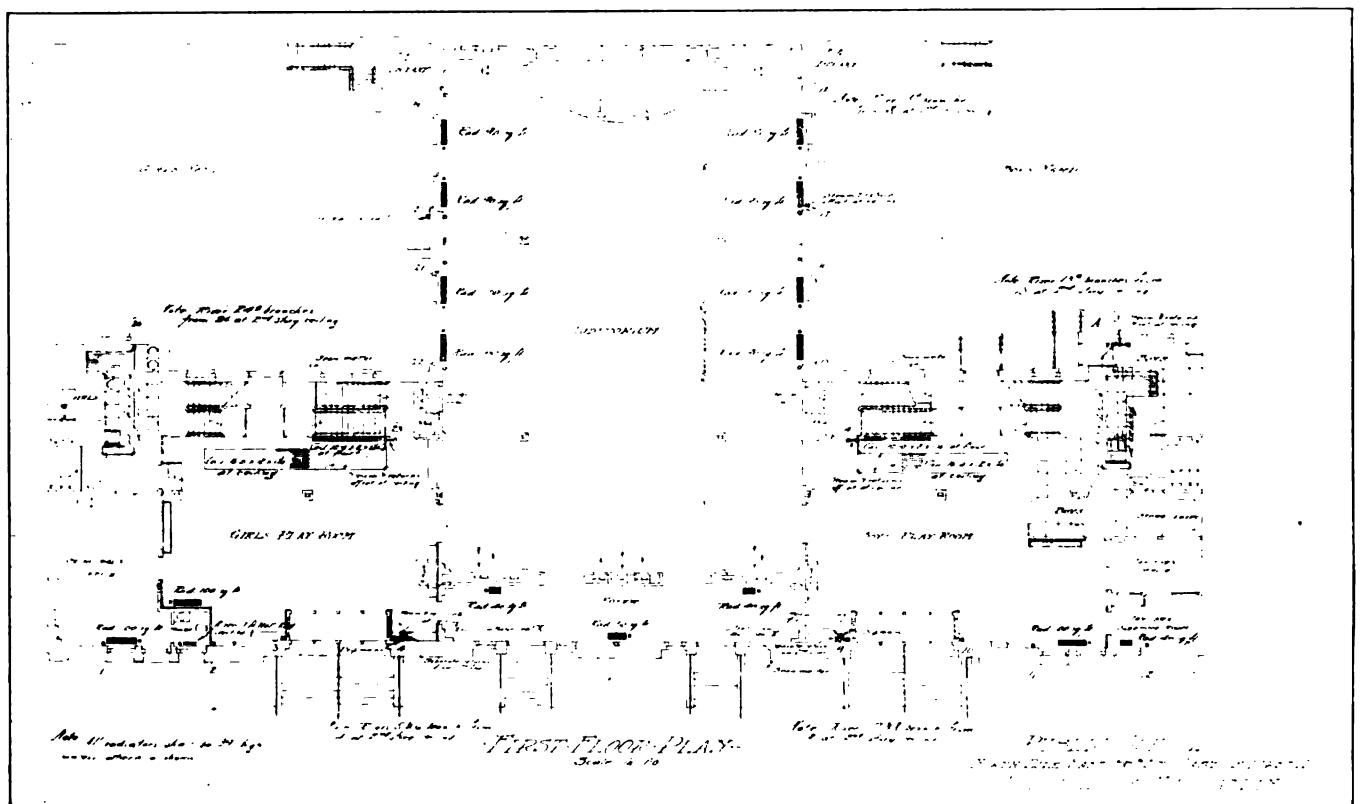


FIG. 8.

stricted for stoop line) was acquired for a building of thirty classrooms.

The assembly room is placed on the first floor running

level and communicate with the Heating Chambers placed in the cellar directly beneath them, where they pass over the indirect stacks; the temperature is con-

trolled automatically by a thermostat, so that the air passing to the classrooms shall not exceed 72 degrees F.

The fans or blowers are placed near the foot of the

conveyed in galvanized iron ducts from the blowers to the various uptake flues leading to the classrooms. Steam for heating and as a motive power for the engines

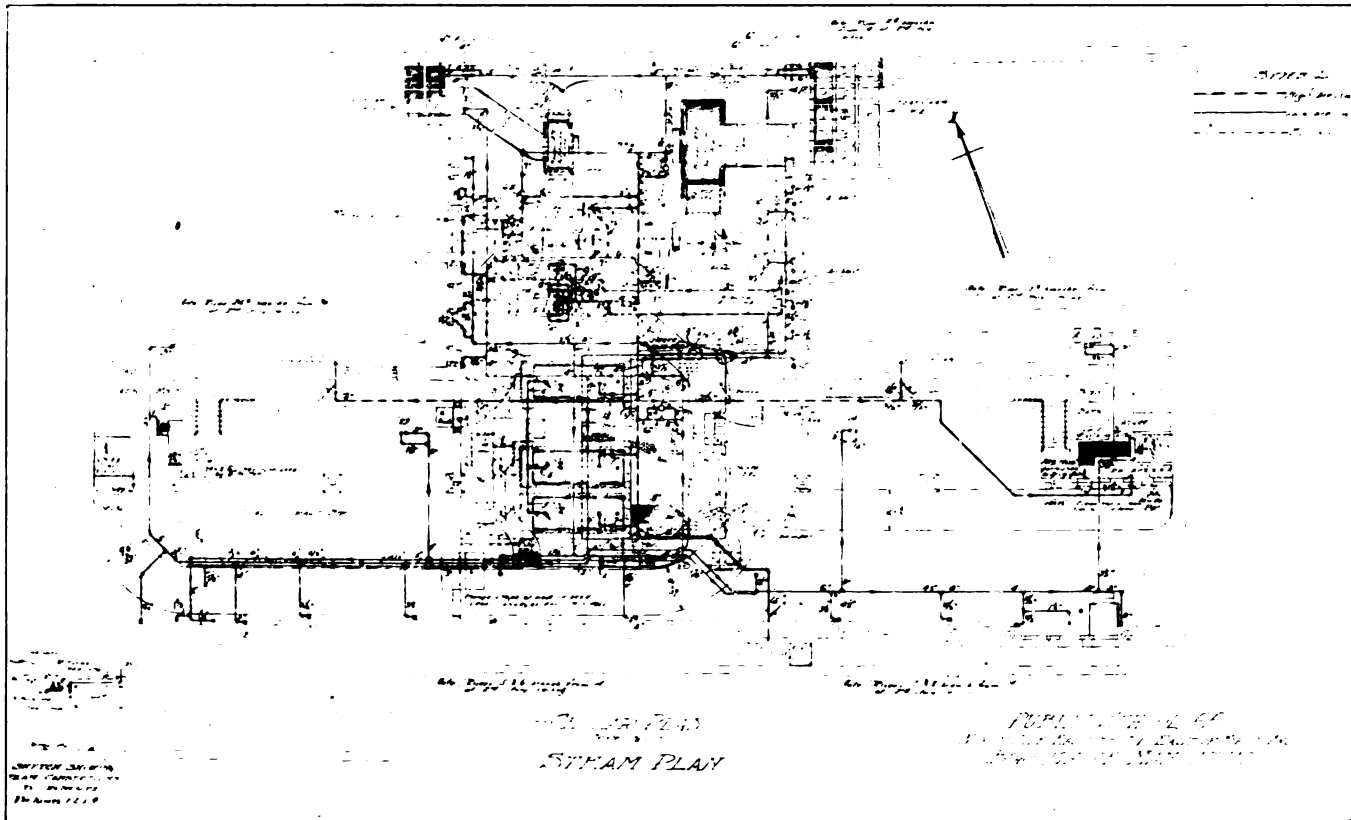


FIG. 9.

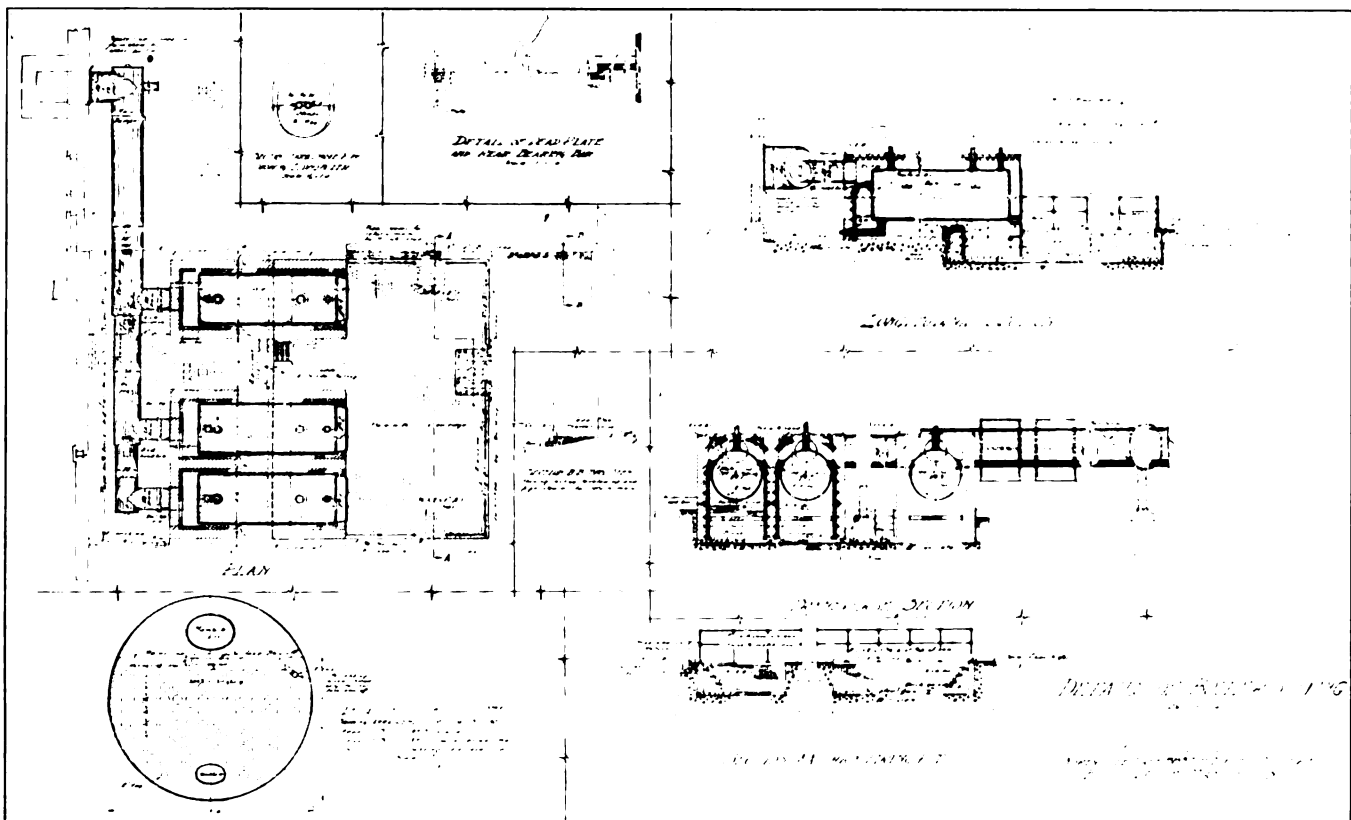


FIG. 10.

heating chambers and are of such capacity that, running at moderate speed, they will supply 30 cubic feet of fresh air per pupil per minute to each classroom, the air being

driving the blowers is furnished by a battery of three horizontal tubular boilers located in the cellar, reducing valves being placed in the heating lines.

The steam plan, location of blowers and the ducts leading therefrom are shown in Fig. 9, the steam return plan in Fig. 10. The details of the boilers, their settings and accessories, are shown in Fig. 10, while the blower

room may always be maintained at 70 degrees, irrespective of the outside temperature and without superheating the air used for ventilation.

The outlets for the vitiated air are placed within 8

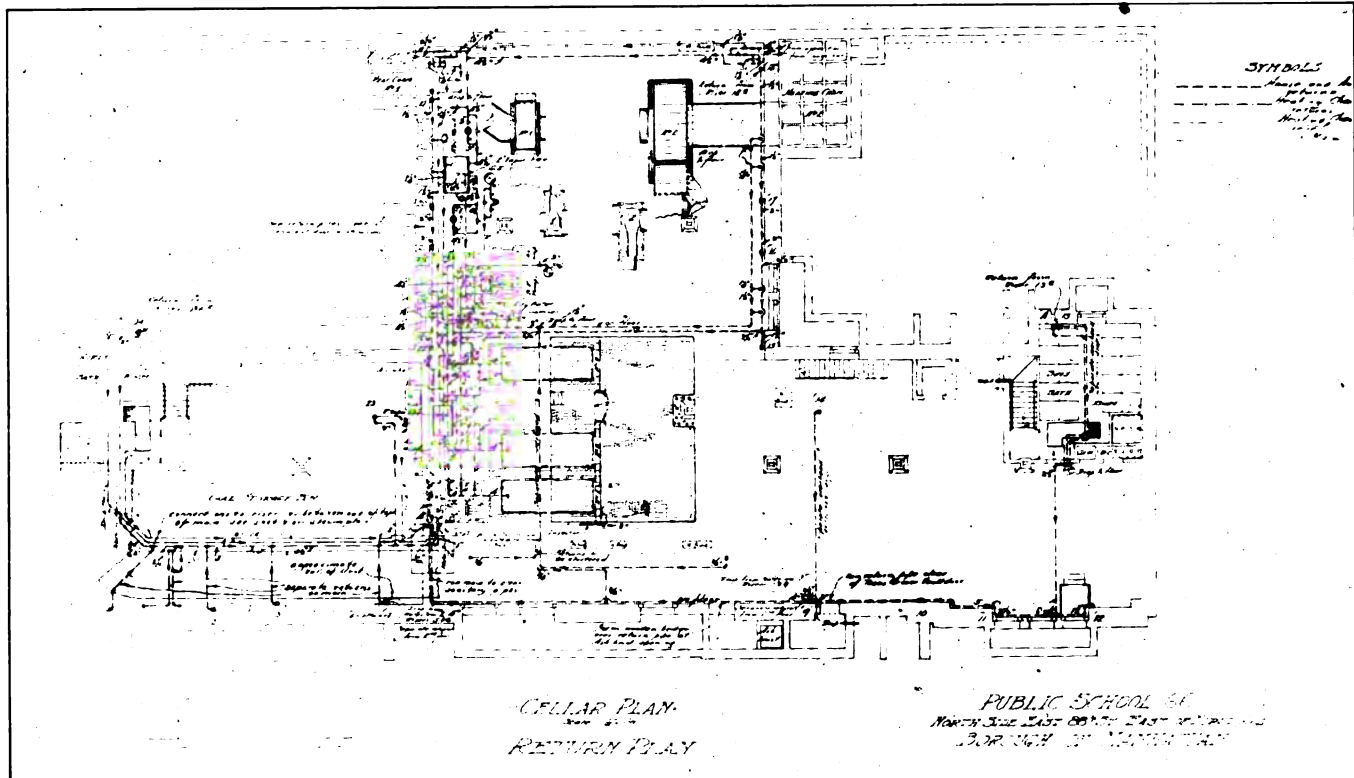


FIG. 11.

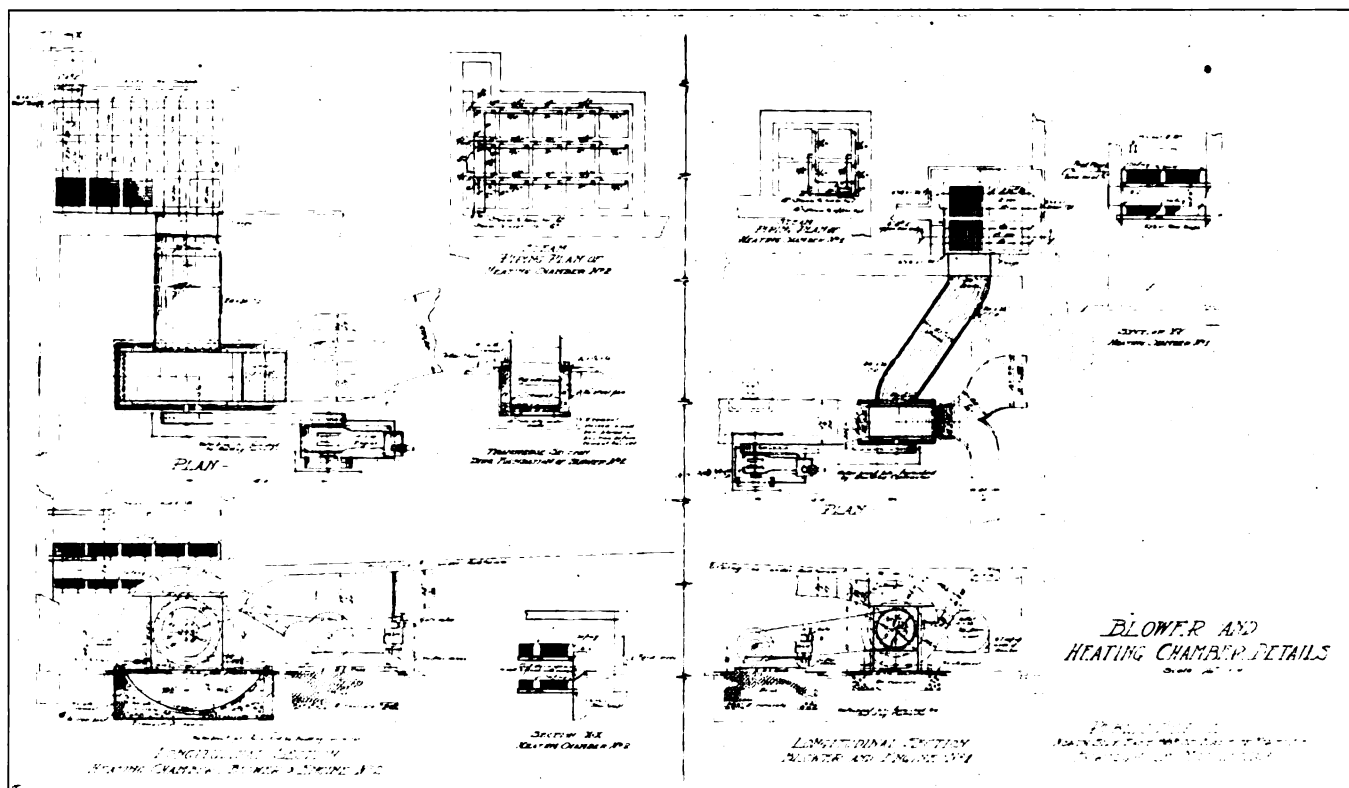


FIG. 12.

and heating chamber details are shown in Fig. 12. Each classroom is provided with an independent source of heat by means of radiators placed usually under the windows, automatically controlled so that the temperature of the

inches of the floor line, both the fresh air inlets and the vent flues being placed in the inner walls of the rooms.

The vents are carried straight through to the roof and finished with an exhaust cowl or hood.

Ample clean-out doors are placed in the flues and heating chambers to permit of their being kept in a cleanly condition.

This method of keeping the heating and the ventilation



FIG. 13.

entirely distinct and separate has been found to give the best results in actual practice, owing to the sudden variations in our climate.

COSTS

SCHOOL No. 3. BOROUGH MANHATTAN. YEAR 1905-1906

Total accommodation, 2,300. Cubic contents, 1,151,620. Area second floor, 12,794.
Number classrooms, 49. Cubic feet per classroom, 22,581. Area classrooms, second floor, 7431.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost Per Cubic Foot	Cost Per Pupil	Cost Per Classroom
Building	\$220,000	.77	.198	\$99.56	\$4,673.35
Heating	31,859	.11	.028	13.85	650.18
Sanitary	29,434	.095	.025	12.80	600.07
Electric	7,650	.025	.007	3.33	156.21
Totals	\$297,043	1.000	.258	\$120.54	\$6,080.21

Remarks.—Assembly room yet to be built on property recently acquired at the left.

SCHOOL 21 (OLD No. 106). BOROUGH MANHATTAN. YEAR 1903

Total accommodation, 2,350. Cubic contents, 1,632,780. Area second floor, 15,566.
Number classrooms, 60. Cubic feet per classroom, 27,213. Area classrooms, second floor, 8,162, equals 52.4 per cent.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost Per Cubic Foot	Cost Per Pupil	Cost Per Classroom
Building	\$338,000	.805	.207	\$143.83	\$5,633.34
Heating	38,560	.092	.024	16.41	642.67
Sanitary	28,976	.069	.017	12.33	482.93
Electric	14,440	.034	.009	6.14	240.66
Totals	\$410,076	1.000	.257	\$178.71	\$6,000.60

Remarks.—Built in two sections under one contract. Auditorium extension, baths and lockers in basement. Thirteen units devoted to offices, baths, lockers, shop and cooking.

SCHOOL 31 (OLD 167). BOROUGH BRONX. YEAR 1898

Total accommodation, 1,500. Cubic contents, 922,470. Area second floor 11,415.
Number classrooms, 42. Cubic feet per classroom, 21,963.6. Area classrooms, second floor, 6,220, equals 54.5 per cent.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost Per Cubic Foot	Cost Per Pupil	Cost Per Classroom
Building and sanitary	\$208,929	.87	.226	\$139.28	\$4,974.50
Heating and Electric	30,880	.13	.033	20.59	735.24
Totals	\$239,809	1.00	.250	\$159.87	\$5,709.74

Remarks.—First floor all playroom except 1 unit—12 units devoted to shop, modeling rooms, lockers, gymnasium and offices. Toilets in yard 31,500 cubic feet.



FIG. 14.

ILLUSTRATIONS

DE WITT CLINTON HIGH SCHOOL:

- PLATE 15. VIEW OF DORMER.
- PLATE 16. THE FOYER.
- PLATE 17. THE ASSEMBLY ROOM.
- PLATE 18. EXTERIOR FROM SOUTHEAST.

WADLEIGH HIGH SCHOOL:

- PLATE 19. TOWER AND ENTRANCE.
- PLATE 20. DETAIL, MAIN ENTRANCE.
- PLATE 21. ENTRANCE ON 115TH STREET.

PUBLIC SCHOOL NO. 31 (OLD 167):

- PLATE 22. EXTERIOR VIEW.
- PLATE 23. DETAIL, MAIN ENTRANCE.

PUBLIC SCHOOL NO. 165:

- PLATE 24. EXTERIOR VIEW.
- PLATE 25. MAIN ENTRANCE.

PUBLIC SCHOOL NO. 175:

- PLATE 26. MAIN ENTRANCE.

PUBLIC SCHOOL NO. 3:

- PLATE 27. EXTERIOR VIEW.

Additional Illustrations in the International Edition.

THE CATHEDRAL, VALENCIA, SPAIN.

DOORWAY IN THE CATHEDRAL, VALENCIA, SPAIN.

CLOISTER: COLLEGE DU PATRIARCHE, VALENCIA, SPAIN.

TOWER OF SANTA ENGRACIA, VALENCIA, SPAIN.

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JANUARY 20, 1908.

CONTENTS

PART II. PUBLIC SCHOOL BUILDINGS IN THE CITY OF NEW YORK, BY C. B. J. SNYDER, F.A.I.A., SUPERINTENDENT OF SCHOOL BUILDINGS, BOARD OF EDUCATION, NEW YORK, N. Y. 35.

WHAT might be regarded as an indication of an awakening in the South and an approaching era of prosperity and generally improved conditions is the frequent inquiries received from that section concerning buildings and allied subjects. Not long since we had occasion to look over the situation existing in a city of some twenty-five thousand inhabitants located in one of the southern States and were considerably surprised to discover that while there were three or four builders who occasionally undertook the preparation of crude plans when they were employed to erect the building, there was not a single practicing architect to be found.

PROBABLY the condition of the city referred to is somewhat unique, but that the South will see a great development as regards both public and private buildings within the next decade, that this development is already gaining momentum, and that there is a promising field for capable architects presenting itself in this section of the country there can be little doubt. As evidence of these conditions we are able to cite the case of a prominent firm of architects located in New York. This firm has now in hand in various stages ranging from sketch plans to structures nearly completed, eighteen buildings of one class, scattered throughout the cities of the South. While it is more than possible that these architects on account of unusual ability and wide experience, would have been selected for some of these commissions, regardless of location and the claims of a local architect, we cannot but feel that a very large portion of this work was bestowed outside of the city and State for no other reason than a scarcity of architects at home. To the young architect about to engage in practice on his own account it would seem that the South presented unusual opportunities.

PROBABLY no city in this country presents so many complex questions to the architect of its school buildings, a number of which are illustrated in this issue, as does New York, and especially is this true of Manhattan Island. As Mr. Snyder points out in his article, the conditions upon which the shifting centers of population depend are so variable that but a few years suffice to alter every requirement of a building in any degree related to school attendance. Moreover the problem of adapting building to site is intricate and perplexing. Where land values are enormous, and suitable plots in the necessary locations are difficult or impossible to obtain, the adaptation of the requirements to the available site necessitates the exercise of no small amount of ingenuity and skill.

NO single feature of the modern school building presents more exacting requirements than the mechanical equipment, particularly the provisions and appliances necessary to adequately heat and ventilate the building under all conditions of weather. While the architectural treatment is of real importance, and the decorative treatment should receive careful attention, for unquestionably both teacher and pupil are vastly benefited by attractive surroundings, the successful operation of the heating and ventilating equipment is imperative. Upon it depend to a degree the health and well being of the rising generation.

A RECENT decision rendered by Judge George L. Phillips sitting in Common Pleas Court, Cuyahoga County, Ohio, is of more than passing interest to architects, builders, and owners. The case grew out of internal dissension in the Amalgamated Glass Workers' Union, and in his decision Judge Phillips held that the agreement under which the blowers, gatherers, cutters, and flatteners were bound in the Amalgamated Window-glass Makers of America, was an agreement in restraint of trade, a trust, and taking the broad ground of public policy ordered the organization or union to be dissolved. In reading over the record of the trial we find testimony offered to the effect that the Amalgamated by its apprenticeship system, kept down the membership of the Glass-makers' Union, thus conspiring to maintain prices arbitrarily fixed by the majority vote in the union.

TO anyone at all familiar with conditions in the building trades this testimony will not sound strange. Too often a building operation stands idle due to internal strife in one or another of the various labor unions employed, and for which the owner and builder must suffer loss although in no way responsible. By restricting the membership of the unions, fixing the scale of wages, preventing work from being done by any but union workmen even to the point of destroying life and property a situation has been created that becomes at times almost intolerable, and if the decision of Judge Phillips can be considered at all indicative of views that may be extended to apply to conditions that exist in the building trades unions, the ruling has unusual interest and significance.

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AND

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WEDNESDAY, FEBRUARY 5, 1908.

No. 1676.



The Original Plans of the City Hall, New York City, Drawn in 1802, John McComb, Jr., Architect

ON March 24, 1800, the Corporation of New York City appointed a committee on plans for the proposed new City Hall.

A premium of \$350 was offered for a plan and elevation of the four façades. From the plans submitted, one was selected, that of John McComb, Jr., and the selection was ratified by the Aldermen on October 4, 1802. Much opposition developed and everything was done by the council to delay formal action. After lengthy discussion the matter was finally settled in the spring of 1803, or three years after the first official action on the subject.

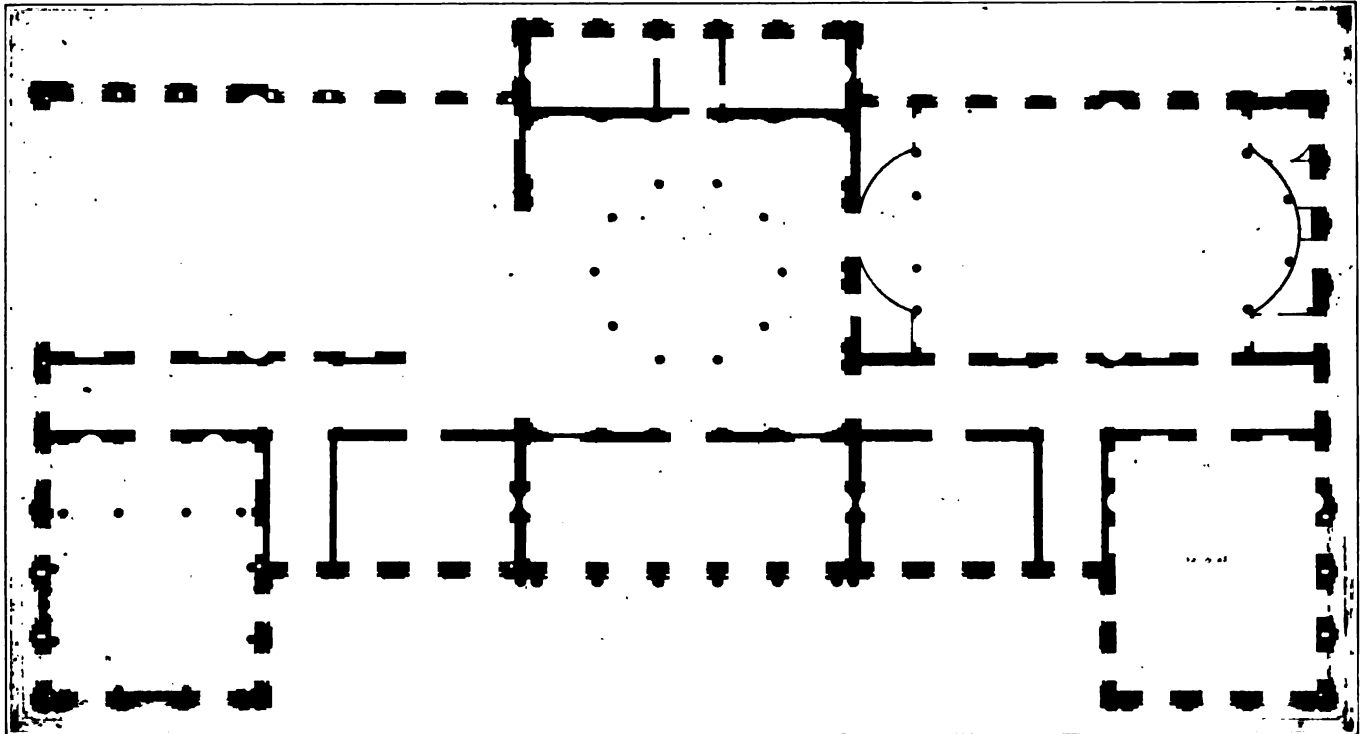
McComb's plans were reapproved, and on May 26, 1803, the corner-stone was laid by Edward Livingston, the Mayor. Our city fathers were truly a deliberate body then, and did not understand the practice of legislative "railroading" as well as their present day successors.

In our issue of January 11, it was announced that McComb's plans had been brought to light among the

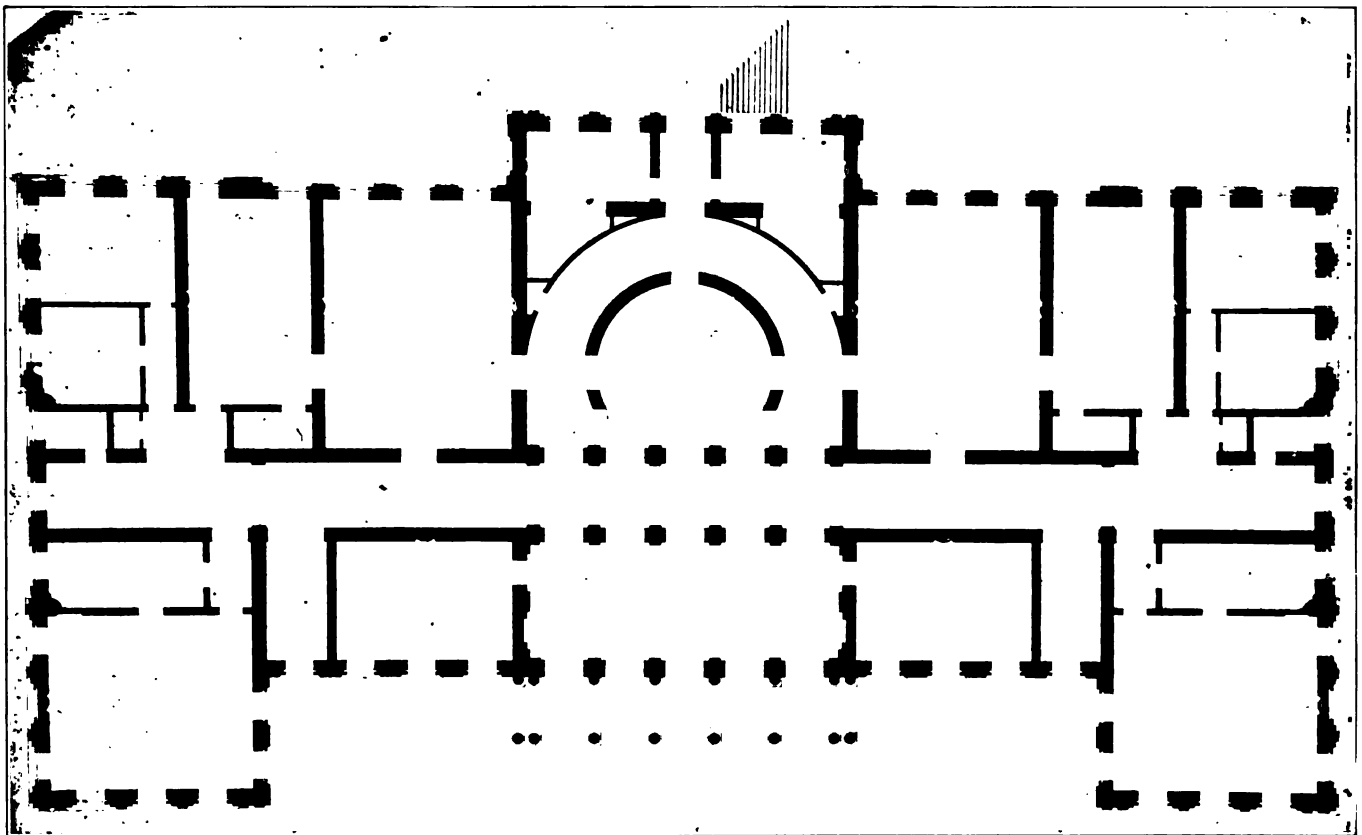
archives of the New York Historical Society. There was also found McComb's diary covering a part of the period of almost ten years from the inception to the completion of this notable building. In the issue above referred to we quoted at some length from the contents of this diary. Since then we have been afforded an opportunity, through the courtesy of the Historical Society, of making a more careful study of this interesting book, and also to make photographs of some of the original plans. These are shown in this issue, and we feel that they will prove of great interest to architects everywhere. These plans and working drawings numbering more than a hundred separate sketches, are in an excellent state of preservation, and, aside from the yellowing of the paper, are as clear and distinct as if made within a year. The elevation, sections and details of sculptured figures and ornaments are all executed in an artistic manner in india ink washes. The remaining plans and details are cleverly drawn, and are in many instances covered with marginal drawings in pencil, showing varia-

tions and suggestions for changes. These it has not been possible to photograph, which is to be regretted, as they are really the most interesting of this large collection.

The rendering of the cupola and the drawing of the figure of Justice as also those of the front, west elevation and cross sections, are the original drawings entered in the competition, and those that secured the award.



SECOND FLOOR PLAN.

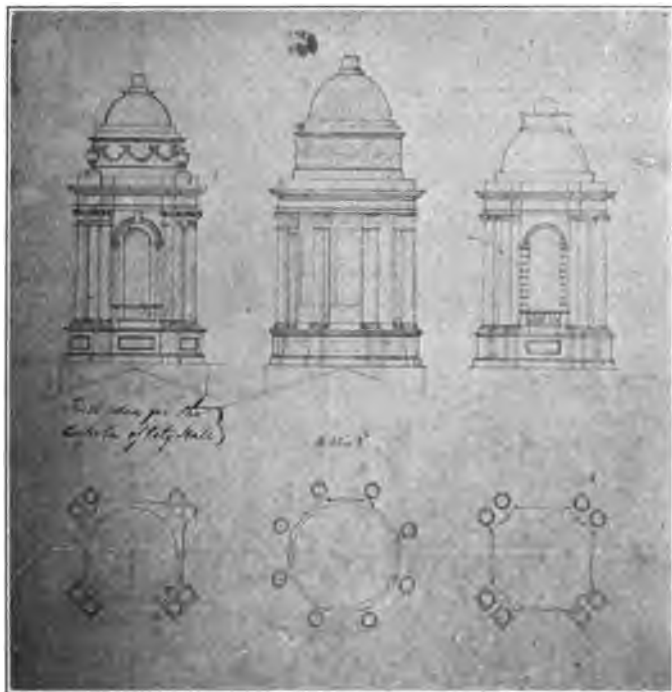


FIRST FLOOR PLAN.

The drawings cover every detail of the work, even to the design for the iron fence which was to enclose the area set aside for the building and grounds, and it is pleasing to observe the painstaking care and the fertility of suggestion they embody.

The figure of Justice and the cupola shown on the drawings are the same as originally erected and which stood until 1858, with the exception that the clock was placed in the spring of 1830. A resolution of the Council, passed at that time, sets forth:

"* * * that it is altogether practicable to alter the present cupola by cutting it off near the bottom of the round part, and raising it up to receive an octagonal section, to show four dials."



FIRST IDEAS FOR THE CUPOLA.

In August, 1858, during a celebration to mark the opening of the cable connecting this country with Europe, a rocket accidentally discharged into this cupola, set it afire and it was entirely destroyed. It is interesting to note in the figure of Justice that she is not blindfolded, as generally portrayed, although the bandage appears to lay across the head, and that the eyes are elevated and directed to the steel yard, held in the uplifted hand.

The elevation of the west front shows McComb's original design, and, compared with the present building, emphasizes the justice of the objections he sets down in his diary, and his great reluctance to carrying out the demands of the Council seems justified.

The proposed foil at the base of the cupola was never executed. We are not sure that this is to be regretted. This drawing, although signed by McComb, as are all those shown herewith, is not in the same style as the others and may have been executed at his direction and suggestion by a draughtsman in his employ.

The transverse section, which is marked in pencil, "Original prize drawing," is of especial interest, as it shows the size of the Governor's room, soon to be restored to its former state. We regret our inability to illustrate more of the drawings of column and pilaster capitals, the carving of which was executed by Lemaire. These drawings are either in pencil or pencil and ink and cannot be successfully photographed. Many of them were executed on a bluish grey paper which age has changed to a reddish brown.

The front elevation presents to-day, with the exception of the reconstructed cupola and much of the ornament, all the purity of design and fine proportion shown by McComb's original drawing.

The figures surmounting the cornice have never been supplied. McComb's drawings include finished sketches

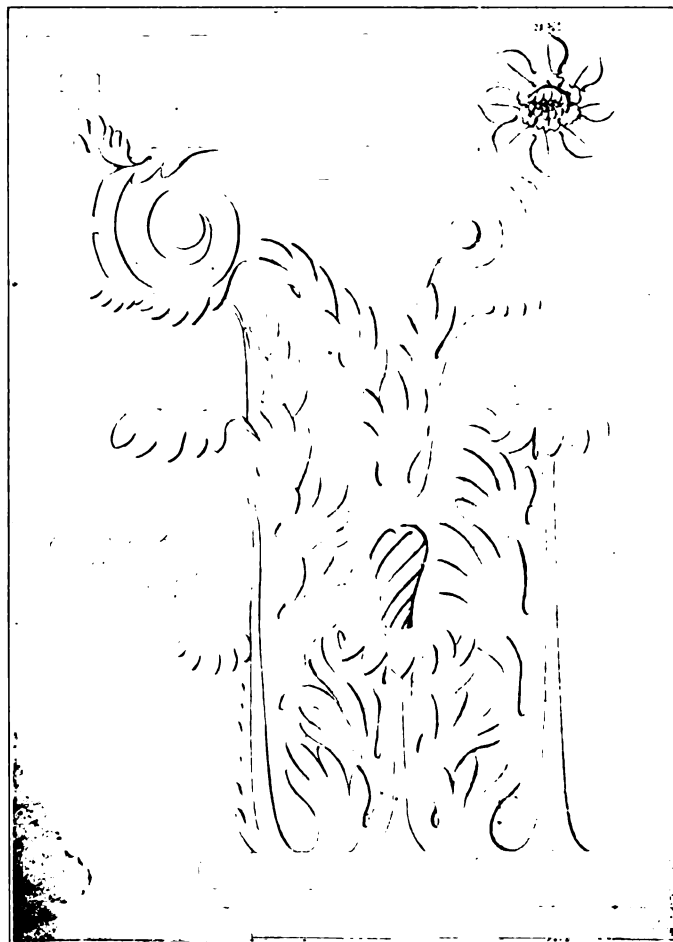
of these, which we much regret space will not permit us to illustrate. These figures are splendidly done, and when placed in line as the architect intended they should stand, show McComb's great ability as an artist as well as an architect, and would enhance to a great degree the beauty of the structure.

Perhaps some patriotic citizen will embrace the opportunity of doing a public service that will perpetuate his name, and make it possible to supply these missing figures. The restoration of the Governor's room at this time by the use of private funds affords us some ground for hope.

The bickerings and jealousies in and out of Council which marked the erection of this building were many and sorely tried McComb's patience. An attempt was made to rob him of the credit for the design or, failing that, to force him to share his honors. This is clearly shown in the following letter, dated December 28, 1804, and addressed to the "Hon. William Livingston Esqre," Recorder:

"Sir:

"Several publications lately made upon the building of the new city hall having excited our citizens, I should think it prudent and very advisable to suggest to the corporation the importance of appointing an able artist as inspector general of the said building to oversee on the works and from time to time recommend such methods or improvements as he may judge proper. Permit me to observe that in Europe public and private buildings are



DRAWING FOR SECOND ORDER OF PILASTERS.

always attended by such an inspector entirely unconnected with the master builder. His office and duty is to point out the best manner of working, to represent the

most proper shape, side and application of every component part of the edifice, to reject bad and unfit material, and finally to point out all sorts of defects and to submit same to his employers.

"Chance has lately brought to this country Mr. Pierre Thomas Jarrier, son of a distinguished artist of Parris. He has been regularly taught the profession of his father and has practiced it upwards of fourteen years. It becomes you, sir, as a magistrate and as a well-wisher of the public good to recommend to the corporation the talents of the said gentleman, who in the appointment above alluded to may save large sums of money to the people by his experience and knowledge of construction of such an edifice as our City Hall. It would be desirable to know the disposition of the Council on this subject in order to fix here a very able artist who, without prospects of engagements in his profession, might shortly return to Europe.

"I am, respectfully,

Sir, your most Obt. Huml. Servt.,

P. DELABIGARRE.

McComb dismisses this offer of assistance when the letter was brought to his attention by the terse statement in his diary: "This letter I returned next day to Alderman Montagnier, assuring him that I could not in justice to myself have any conversation with Mr. Jarrier."

The practice of architecture in McComb's time was both an art and a trade. He not only drew the plans, including the figures and the specifications, but he was

also the master builder. His records give the exact dimensions of every piece of stone used in the work, its location, and the quarry from whence it came. He personally superintended the construction in all its details, and when, through strikes and epidemics, his presence was not required, he was in the saddle, visiting the quarries and directing the getting out and cutting of the stone.

He tells of a vexatious trip to the "stone pit in the Berkshires." How he took a sailing vessel up the river to Hudson, where, disembarking, he secured a saddle horse and reached the quarry at the end of three days.

New Yorkers need not be more than middle-aged to remember the City Hall as it stood facing a wide park, now the site of the postoffice, with St. Paul's Church and Barnum's Museum the first buildings on the south. In 1811, when the City Hall was first occupied, the view was an open one down Broadway. A few scattered buildings marked the site of the present St. Paul Building, with St. Paul's and Trinity Churches the only buildings of moment in view.

McComb was born in New York City October 17, 1763. In his early youth he witnessed the stirring scenes of the Revolutionary conflict, and in 1802, when he drew the City Hall plans, he had not reached his fortieth year.

After a life spent in designing and superintending the erection of some of the most notable buildings to be found in this country, he died on May 25, 1853, at the ripe age of almost ninety years.

The Artistic Expression of Concrete

By A. O. ELZNER.

THE mere contemplation of this subject, so large in its scope and as yet so little exploited, makes a writer feel like a traveler in a new land: to know where to begin and where to end: whether to follow the line of least resistance and make it a general or a detailed review of accomplished results, or, taking courage, to strike out boldly, discover motives, express opinions, and generally lay down the law.

The one course would scarcely be appropriate here, because it requires no combined effort. The other course is full of danger and pursued alone would consume too much time and invite too much criticism. Let us therefore take some of each with moderation, and see whether we cannot produce a monolithic structure, with a mixture of one part good fellowship, thoroughly seasoned and tested according to the Institute Standard, two parts clean, sharp sand, and four parts unscreened crushed hopes and ideals, wet-mix and thoroughly tamped to place.

Above all, this discussion should properly be confined to concrete used structurally, having in view the possibilities of a constructive architecture rather than a mere application of sculptural decoration. Proceeding upon this basis, we may at once eliminate all consideration of concrete blocks and artificial stone, inasmuch as these products, being mere substitutes for brick and stone, and being used in the same manner, do not alter the status of our art, but leave it just what it has been from the beginning, a gravity architecture, if this term may be used.

The great antiquity of concrete as a building material would justify a search for early examples of its use in architectural expression. But apparently this remarkable material, which, after all, is only just beginning to reveal its ultimate possibilities, was used by the ancients only for the baser purposes of piling up masses of masonry, or at best as a backing for stone and marble facings. The first suggestion of its fitness for artistic expression came when the builders of the renaissance undertook to construct their architectural features of cement mortar.

There is undoubtedly a great fascination in being able to mould a thoroughly plastic material as cement mortar into any desirable form, or even to shape it by hand before it sets up hard, and so produce creditable work of decorative sculpture. In fact this is being done rather extensively even at the present day. But one invariably suffers a genuine shock upon discovering that a thing is not what it seems, and that beautiful, stately colonnades or arcades and porticos, well designed and in style, are not built of stone as one naturally expects to find them, but that it is all a sham; that we are looking at a thin veneer of cement mortar, which, at best, is but a temporary device, a sort of makeshift, calculated to mislead and deceive. But during this period of development, while architects are being led to adopt new materials, they did not concern themselves with the evolution of design in conformity with their new materials, and it followed quite naturally that no progress was being made

toward the realization of a concrete Architecture. In fact no attempt was apparently made in this direction.

It would be difficult to estimate the power or extent of Ruskin's influence in bringing about a restoration of truthfulness in design. While it cannot be said to have extensively affected immediate and tangible results, it did set men to thinking, and it is only in recent years, within the present generation in fact, that this subtle influence is gradually asserting itself, and naturally bringing about a renewal of real artistic inspiration.

It is hard to depart from beaten paths, and men, as a rule, will not and cannot, until some genius boldly cuts a new way. It is hard to give up the old, familiar forms that have become a veritable architectural alphabet, which seem to most of us entirely sufficient for the expression of our ideals. And now that we have entered upon an area of concrete construction, and that, too, with a suddenness and determination that is thoroughly and typically American, we cannot reasonably expect designers to throw aside all tradition and make a new style. That will take time. Nevertheless, they are gradually coming to recognize in concrete a material that will afford abundant opportunity for originality and individuality, and, accordingly, bold excursions have been made into the new field with creditable results.

In looking about for inspiration, we may turn to a number of sources. There are, for instance, the picturesque Oriental mosques with their domes and minarets.

But above all, we cannot well resist the inspiration of the charming Spanish missions of the Pacific Coast countries.

Here we find an architecture which, though not of concrete, strongly suggests the same in its simple treatment of wall surfaces and openings. The designers of these charming buildings were fearless in departing from traditions. They frankly recognized the limitations of available materials, and, working as they did, under the greatest possible disadvantages, succeeded because they studied the possibilities and logical adaptations of their material. Fortified as they were with the true principles of art, in which they were thoroughly grounded, they produced practically a new style, which, however, sacrificed nothing of quiet dignity and repose, and avoided the necessities and pitfalls of the new style of the present day, *L'Art Moderne*, or *Nouveau Art*. Such is the spirit which should possess and guide the designer of concrete to-day.

Concrete, as it is used in superstructures, being the only kind which we are considering, is based upon the use of a small aggregate, about one inch and less in size, and mixed wet so as to make a solid, dense mass; this produces a soft, plastic material which should be mixed by machine to produce the best results. This, on the other hand, cannot be economically done unless large quantities can be used without serious interruption. It follows naturally that such a structure is more or less perfectly monolithic in character, and at once this feature becomes the dominant note of the structure. Monolithic is freedom of joints or even semblance of joints; this idea should be expressed in our concrete designs and it should be the dominant characteristic. To accomplish this successfully we should endeavor to treat wall surfaces in masses as large as possible. They need not necessarily be kept entirely plain, although this would depend upon the nature of the design. In cottage work

and small buildings generally, such large, plain surfaces are perfectly delightful, especially when given a rough finish. This can be accomplished in various ways.

First of all, the concrete may be left just as it comes from the moulds. In this case the aggregate should be quite small, not over one-half inch, and the mix should have the minimum allowance of water, making what is called a dry mix. In doing this, however, there is great danger of the wall not being waterproof, so that, if possible, such a mix should be used directly against the forms and the balance of the wall made of wetter, richer mix and of fair thickness that will prove sufficient to be waterproof; or else this rich concrete may be used throughout and the forms removed before the final set, and the skin of the concrete removed with water and a good, stiff wire brush, or with acid.

But with all such treatments there is always the danger, as first indicated, of having a damp wall, especially where it is not very thick, as is apt to be the case with reinforced concrete. Practical consideration, however, must finally govern, lest the unfortunate architect's life be made miserable by the complaining client, who naturally expects, and is entitled to, a dry wall. Under such conditions it is therefore advisable to plaster the concrete wall with a good coat of waterproof mortar and give this a rough finish by the various methods at hand: such as brooming or floating with a rough carpet-covered float, or strippling, or pebble-dashing, or splatter-dashing, all of which methods are commonly understood.

The fresh mortar thus applied may be modeled by hand, producing some simple ornamental design, naturally in low relief.

Advocates of polychromatic architecture, too, have here splendid opportunities of using tile or faïence, which may be applied to the surface with telling effect, provided that it is used sparingly, and entirely as a subordinate, so as to emphasize the character of the concrete and enhance its beauty and effectiveness.

In large, massive work, the surface may be broken by raised or sunken work, such as panels or ornaments, cast directly in the concrete by applying reverse moulds on the inner surface of the form work.

Cornices and band-courses, or other simple architectural features, may be fashioned in a similar manner.

Although in such work, if small members are used, the concrete should be mixed quite wet, or else a rich mortar should first be deposited against the forms before the concrete is poured in; this would avoid the danger of honeycombing on the finished surface and the necessary patching resulting therefrom. Such mortar should be mixed with some waterproof compounds to prevent blotching or staining.

A recently introduced waterproofing material is a liquid solution of iron, which is applied to exposed concrete surfaces and soon oxidizes, turning to a beautiful spotted nut-brown, the familiar color of old iron rust. Such a treatment would be charming, if applied to a picturesque cottage; in fact, it might be used to good effect upon large wall surfaces in more pretentious work. In any event, it could be safely done and with perfect propriety from an artistic standpoint.

However, it is not our purpose nor our province here to exhaust the subject of the proper or possible treatment of wall surfaces, nor to attempt to prescribe any definite or final formulæ or principles of design. We can

only hint at them now, for they must finally be left to the slow but certain process of evolution.

To summarize, then, our subject of the "Artistic Expression of Concrete" presents to us two phases, the practical and the theoretical; the former just passing from its infancy to its childhood period, if such an expression may be permitted, and the latter being as yet in a decidedly nebulous condition.

If we were to proceed on the assumption that a distinct individuality of style can ever be imparted to concrete construction (and this seems to be the substance of this discussion), then in reviewing the practice of this new art we must agree that the designers have proceeded too hastily, with too much lack of consideration, and that they are not doing justice to themselves or to the material in clinging so closely to the architectural forms that have been evolved by centuries of gravity construction.

On the other hand, in considering the theory, we cannot but feel much sympathy for such designers, for they are hard-pressed by the extreme revolutionary character of our new material. Concrete being structurally serviceable only in its reinforced form, implies practically monolithic construction; and its economical use compels the economical designs of its members, and the consequent use of high unit stresses, many times in excess of those in brick and stone masonry.

It is primarily an engineering proposition, and while we are not wont to credit engineers with much artistic instinct, we must admit that they are doing much toward guiding designers to the path which will eventually lead them to a true concrete style. This is especially the case in bridge work. Hitherto they have struggled in vain to produce anything artistic in the design of steel bridges; but now they are reveling in our new material, and beautiful designs in concrete bridges are quite common.

In tall buildings, however, the advance has not been so favorable. The first tall concrete building employed concrete for structural purposes only, and no attempt was made to use it directly in the artistic expression. It was veneered, in fact, with marble, brick and terra-cotta, and perhaps wisely so, for thereby many pitfalls of a new and untried all-concrete architecture were avoided. In other words, it virtually terminated the function of concrete to structural purposes, as is done with steel, and by dominating its adaptability in this respect gave a tremendous impetus to its general adoption. Along with this movement went the common practice of using the external veneer and curtain walls, and architects seem very loth to abandon this method in favor of an all-concrete façade, largely on account of the many practical difficulties and uncertainties involved. Nevertheless, some serious attempts have been made to overcome them.

Possibly this may be pointing the way to a final solution of the perplexing problem of sky-scraper design—who knows? It certainly contains the elements of sound logic and common sense and is far more rational than the veneered skeleton method. But, let us see what it means, not only in respect to tall buildings, but rather to concrete architecture, generally speaking.

As we said before, unit stresses are much higher; piers are therefore of necessity small in comparison with masonry walls, and floors are thin; doors and windows no longer require lintels and roofs become monolithic with the walls. With one sweep, therefore, all our principles

of a stable architecture are destroyed, and the design of our façades can no longer be based with consistency upon the familiar divisions of the classic column, which gave us the formula of base, shaft and capitol, perfectly balanced upon one another.

In fact, this new art of building fairly compels the abandonment of our beloved friends, the classic orders, for they evidently do not fit in very well with the new dispensation. On the other hand, our clever designers are too thoroughly grounded in the classics, and too much imbued with their spirit to follow with alacrity the call of the new order, and they refuse to take seriously the dictates and vagaries of the Nouveau Art.

Nevertheless, conditions are growing more favorable for the development of this style, and while there is yet but little tendency in that direction in this country, some creditable work is being done abroad, and we practical Americans may be able to glean much good from such efforts.

It seems strange that we have been so very slow in this country to take up concrete for the construction of our houses. We certainly have not wanted for precedents. In fact, years ago, when concrete was scarcely thought of, Messrs. Carrère & Hastings, as you all know, constructed numerous buildings in St. Augustine, Fla., in which they used concrete made of the local coquina rock, very white and beautiful; notably among these was the Ponce de Leon, a beautiful design in Spanish style; while another charming example was the Presbyterian church in the same city.

It is not altogether unlikely that the boldness of this departure, together with the practical difficulty of construction, and possibly the unusual delicacy of the detail in this work, were the cause of deterring architects from following such a lead. For after all, simplicity of treatment is the real secret of the successful concrete design, and we may gain hope from the cement and plaster work, which is being executed rather extensively in all parts of the country.

In fact, much of this work might just as well have been executed in solid concrete.

The style is generally good and is finding favor with concrete designers, who are eagerly adopting it in much of the new residence and miscellaneous work to which this is so admirably adapted, that it appears to be the natural solution of this phase of our problem, and we easily recognize its influence in the best examples of recent solid concrete work.

Nevertheless it is highly probable that our concrete architecture will carry with it for some time to come the practice of design in all current styles, or no style at all, and that if we would ever expect it to assume a really artistic expression—one that will have the true ring, and will endure for all time—it will be found only in isolated examples, produced now and then by some genius with the divine spark, as is the case with all true works of art.

Old Pewter

WE believe a good fad, sanely followed, lends zest to life and robs the daily grind of much of its monotony. But, unfortunately, the man with the fad has more often less time to pursue it, or but limited means to acquire the objects he so much covets. It is just here he becomes the easy prey of the crafty or un-

scrupulous dealer, and in his zeal to add to his collection finds that he has acquired no end of spurious material.

We dwelt in a previous issue on the craze for old furniture, and our interest is awakened in this fad of collecting on reading in a current magazine an article on old pewter.

Probably none of the so-called antiques are so easy of imitation as pewter, or Babbitt Metal. Its softness makes it easily dented, and a new and modern piece cast on old lines, after but a short time of usage, takes on all the characteristics of age. In proof of this, the writer once called on a certain architect, who, after discussing the object of his visit with him, took from a cupboard in his office two pieces of pewter. One a flagon, the other a teapot. The shape of both were good and along the lines of best colonial examples. They bore all the outward marks of age, even to certain repairs to handles. The dates stamped on these two pieces cannot now be

exactly recalled, but they were dated more than 120 years back. Subsequent facts as to these two pieces showed them to be not only modern but quite recent. They had been artificially aged. From a decorative standpoint they were just as good as if their dates were genuine, but as they had been bought and paid for as antiques, they naturally had no place in a collection of old pewter.

Examples in this as well as in other lines of collecting might be indefinitely cited.

It is not intended to discourage the collector from continuing his quest, but it is to be hoped that his enthusiasm will not allow his judgment to be misled, and thus acquire a lot of worthless stuff. Eternal vigilance is his only watchword. To again refer to what we previously wrote as to old furniture, the period a hundred years and more ago could never have produced but a small proportion of the vast amount of so-called antiques now attributed to it.

ILLUSTRATIONS

ORIGINAL PLANS FOR THE CITY HALL, NEW YORK, N. Y. DRAWN IN 1862 BY JOHN M'COMB, JR.

ELEVATION OF FRONT, OR SOUTH FAÇADE.

ELEVATION OF WEST FRONT.

PROPOSED FOIL FOR BASE OF CUPOLA.

CROSS SECTION.

FIGURE OF JUSTICE.

THE CUPOLA AS ORIGINALLY DESIGNED.

For other illustrations see article in this issue.

HOUSE OF N. W. HARRIS, ESQ., LAKE GENEVA, WIS. SHEPLEY, RUTAN & COOLIDGE. FOUR PLATES.

THE HOME OF N. W. HARRIS, ESQ., AT LAKE GENEVA, WIS.

This new residence at Lake Geneva, Wis., designed by Shepley, Rutan & Coolidge, architects, is situated on a knoll overlooking the lake, the grounds sloping gradually to the water.

The house, designed in the Georgian style of architecture, is built of dark red brick in Flemish bond, with limestone and wood trimmings. The building is about one hundred and thirty feet long, with covered piazzas at either end arranged to be closed in with glass doors in cold weather. The east piazza is in two stories. Beyond the west piazza is a semi-circular portico which has a glass roof to admit the sunlight to the chamber windows which come under it. In the middle of the south or lake side is a large portico rectangular in plan, which, like the west portico, has Corinthian columns running the full height of two stories.

The principal rooms are all on two floors. The service portion is in a separate wing. The main entrance is on the north side through a porte-cochere. The reception hall occupies the center of the house, running through from front to back, and from it open the principal rooms of the first floor. The hall is about thirty by forty feet and is two stories high, with a gallery around it at the second story. The walls are painted white and are treated with pilasters and panels. The ceiling is vaulted and the cornice is richly ornamented.

The library and den occupy the west end of the house and open onto the west piazza. They are finished in dark oak with heavily beamed ceilings. The library is about twenty by thirty feet. It is decorated in old English style, the bookcases and wainscoting extending from floor to ceiling.

The billiard room, finished in dark oak, has a beamed ceiling and a low wainscot, the walls above the wainscot being divided into panels by wood pilasters. A heavy carved bench is built along one side. The massive mantel is of Alps green marble.

The dining room, which occupies the southeast corner of the house, is about twenty by thirty feet. The walls are treated in delicate tints, panelled, and with a low white wainscot. The mantel is of Violet Brescia marble, with relief work in plaster on the breast above it. The ceiling is richly panelled and ornamented in plaster. A glass door opens onto the east piazza. This piazza also communicates with the butler's pantry and may be used in place of the dining room in summer.

On the second floor are six principal chambers and two dressing rooms. The chambers all have fireplaces and are provided with well-equipped closets and with bath rooms having white marble floors and wainscots.

The attic contains storage rooms and cedar closets.

The kitchen, pantries, laundry, servants' dining room and servants' toilet are in the first story of the service wing. On the second floor of the wing are four servants' bed rooms, bath room, closets, etc. The servants' piazza is placed at the rear of the wing.

In the basement are store rooms for fruit and vegetables, wine closet, coal bins and boilers. The heating apparatus is an indirect hot-water system. The entire house is lighted by electricity.

HOUSE OF W. W. ORR, ESQ., SCARSDALE, NEW YORK. MR. JAMES BRITTE, ARCHITECT. TWO PLATES.

The interior follows in style the English type of country house. The first story is of stone, the upper stories of plaster on wire lath. The roof is shingled. The general color effect of the exterior is grey, to harmonize with the background of foliage.

Entrance hall is finished in quartered white oak. The living room is painted a flat white, the dining room a grey green. All bed rooms are painted a flat white. The floors throughout the house are of hard wood. House is heated by hot air. In the attic there is a billiard room, two extra guest bed rooms and three servants' rooms.

At the rear of house is a bleaching lawn enclosed with a lattice.

HOUSE AT PELHAM MANOR, NEW YORK. MR. OSWALD C. HERING, ARCHITECT.

This house is a frame structure, 28 by 43 feet (not including porch and conservatory), having a covering of white marble dust stucco applied to a grooved stucco board, which is nailed to the sheathing after the latter had been covered with sheathing paper. The outside woodwork is cypress painted white. The inside trim, except in the servants' quarters, is white pine painted white, with birch doors washed with red potash and stained to imitate mahogany. The trim in the service portion is cypress, finished in the natural wood color. Each story has a rough flooring over which a heavy felt paper is laid, and on this a finished floor of Georgia yellow pine.

The attic has a single finished floor, but otherwise is left unfinished, except that plumbing and heating pipes and electric wires are run to the floor level for a future bath room, studio and two servants' rooms. A feature of the house is the conservatory, which is separated from the dining room by a glass partition and door, giving an appearance of great length to the latter room. The house was built in 1906 and cost approximately \$7,000.

Additional Illustrations in the International Edition.

HALL IN HOUSE OF N. W. HARRIS, ESQ., LAKE GENEVA, WIS. MESSRS. SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS. TWO PLATES.

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The Drawings of John McComb, Jr.—The Tendency
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THE recently discovered drawings of the New York City Hall by John McComb, Jr., a number of which are reproduced in this issue, again suggest a comparison between the architects of to-day and those of a century or more ago. That these drawings bear evidence of the most painstaking care and consummate skill there is no question and when in addition to the drawings, McComb's diary is examined and the most minute details and complete information which it contains relative to this building are noted, and the stone book which gives in the architect's own writing complete dimensions of every piece of stone and marble entering into the construction of the building is considered, and it is also remembered that he visited the quarries and superintended the work there as well as at the building, personally hiring the workmen and taking entire responsibility for the successful completion of the undertaking, the architects of to-day will be ready to grant that in this instance at least the services rendered and the results attained indicate a very high efficiency in the earlier architect. Of course it will be recognized that in a measure the work of the earlier architect was produced under conditions widely differing from those obtaining to-day. In all probability John McComb had no other work in hand while engaged on the City Hall and so was enabled to devote his undivided time and attention to it. Similarly the majority of the earlier architects were content to follow a commission to its final consummation before actively taking up the next.

THE tendency of the age in architecture as in practically every field of endeavor seems to be toward specialization. Whether the architect wills or not he is forced more or less completely into one or two particular lines of work by this tendency which amounts almost to

a demand on the part of the general public. We believe the majority of architects rather shrink from being known as specialists, and would if permitted much prefer to be considered generally competent architects rather than specialists. The appellation is forced by the client. Thus we hear of specialists in bank planning, specialists in the design of churches, school house specialists, or specialists for country houses or any other particular class or kind of buildings. In many instances architects have found that to have a more or less well-deserved reputation as specialists in planning a certain class of buildings, was a distinct disadvantage when endeavoring to engage in general practice. So completely has this idea of specialization taken possession of the average client that it is exceedingly difficult for an architect who has a reputation for ability in planning hotels, for example, to convince the client that he might also be able to design a bank building successfully.

WHILE undoubtedly the specialist is enabled eventually by reason of constant practice to unerringly produce a workable plan and combine it with a design and decorative treatment that at least is in accordance with current and accepted practice, there is a grave question whether the entire problem will not ordinarily be treated substantially like the last, which of course followed to the ultimate conclusion would mean lack of progress.

IT would seem as though there might be some question as to whether greater progress will be realized, a higher development attained by submitting to this demand and employing the specialist with the possible attendant likelihood of well enough being let alone, of securing from the specialist the solution that has been tested by him repeatedly and that will serve the purpose with certainty, or by submitting the various problems to genius more or less untried where there would be at least a possibility of a brilliant solution.

IT might be pointed out that the history of invention and progress furnishes but few illustrations of great improvements made by men comparable with specialists who repeat an action or piece of work until they acquire a dexterity and skill that is almost marvelous, but is practiced unconsciously so that the specialist eventually resembles to a certain extent an automaton. It has been the man confronted with a new requirement, a new necessity, who perhaps is ignorant of the accepted theories and solutions, who views the field from a new angle, who brings new energy and a keen perception trained under other conditions to bear on the problem who has contributed the most to the world's store of human attainments.

OBVIOUSLY the question is one susceptible of argument pro and con. Undoubtedly some failures might be expected if specialists were eliminated and the general practitioner called upon to handle their special problems, but it might be urged that after all in the final analysis the question is not how many failures have been recorded, but has a success been scored. To the unfortunate fact that a failure is ordinarily accomplished at the expense of the client and the possibility realized by each that he may be the victim of inexperience is due probably more than to anything else the existence of the specialist.

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A HOUSE ON LONG ISLAND.
John Russell Pope, Architect, New York.

The Twenty-third Annual Exhibition of the Architectural League of New York

IF it was the purpose of the Jury of Selection of the Architectural League of New York, whose twenty-third annual exhibition is now in progress at the Fine Arts Building in this city, to provide an exhibition that would appeal to the general public and awaken an interest in architecture, it has well accomplished that purpose.

From this point of view we cannot remember a more satisfactory exhibition than the present one. The examples presented of finished work are most dignified, and show marked improvement over former years. The art-loving visitor, with no knowledge of architectural principles, can profitably spend an afternoon or evening at this exhibition.

The south, or entrance gallery, is devoted to the decorative treatment of architecture, and, if the visitor were to limit his visit to this gallery he would not suspect he had attended an architectural exhibition. It might be considered an exhibition by the Society of Mural Painters.

On entering the central gallery, remodeled so as to eliminate the objectionable small rooms that formerly flanked the atrium, the motive of this exhibition becomes more apparent.

The north, or Vanderbilt gallery, presents an appearance more suggestive of an architectural exhibition. But

even here the professional visitor, more in search of instruction than entertainment, begins to realize a sense of disappointment. He becomes impressed at once with the very dignified character of the work shown. His interest is awakened, and he finds much on the walls to attract attention. But, unfortunately, the *material* for careful and extended study is not present.

Beautiful renderings, we have never seen finer, artistically made photographs, skilful pen and ink studies, command admiration and unstinted praise. These all show completed work.

The detailed showing from inception to completed work is missing, and that is what most interests the student and the professional.

There is, with few exceptions, no subject of moment in this exhibition that has not been thoroughly illustrated in the architectural press, and therefore already familiar to the professional visitor.

What he wants to see, and will most appreciate, is not an artistic photograph of completed work, but the plan, elevation, section and details. All these interest him, and these are not in this exhibition in sufficient numbers to make it a valuable one technically.

In all the six hundred and more exhibits the catalogue does not show above fifty plans or detail drawings,

and these are mostly school work. This proportion is so much smaller than any previous exhibition of the League that it at once excites comment from the visitor familiar with former exhibitions.

In spite of these critical remarks, let it be understood that this is a splendid exhibition. It is a free gift by the League to the people of New York, as there is prac-



SINGER TOWER AND BUILDING AS SEEN FROM LIBERTY STREET.

tically no admission charge, every day being free with the exception of Tuesdays and Thursdays. And this fact of a free exhibition to educate the people has perhaps influenced the selection of the exhibits.

The doorway to the Vanderbilt, or main gallery, is framed with models of medallions and brackets for the Morgan Memorial Addition to the Wadsworth Athenaeum, Hartford, Conn. These are well executed applied ornament, and suggest in a clever way the expression of the use of the building.

Attention on entering this gallery is at once attracted to Albert Herter's decorative canvas, measuring nine by eighteen feet. This hangs in the central space, on the north wall, or "place of honor." The subject is the "Attributes of the Arts."

It is stated that this was painted to decorate a room in the artist's house. It is difficult, and manifestly unfair, to criticise a decoration except in its final resting place. Taking this large canvas, as at present situated, there might well be some differences of opinion as to its desirability as a form of decorative treatment for a domestic interior. Subjects treating the nude must be handled in a masterly way to evade suggestiveness, and we are not quite sure if Mr. Herter can be altogether absolved from this. It is certain, however, that from the standpoint of color and technique this canvas is fully up to Mr. Herter's best previous efforts.

Flanking this decoration on the right is a beautifully executed pen drawing by Charles Collens, done in 1901. This is a view of Notre Dame Cathedral. It is one of the most artistic exhibits and rightfully placed adjoining the place of honor.

It is no reflection on the efforts of an architect to say that the presentation of his work for exhibition purposes is greatly aided by an artistic rendering. And we believe it is also true that an important work, poorly shown, will not attract the attention of the laity, and in some cases the professional, to which it is entitled.

Further, it is no disparagement of Mr. Kimball's splendid "City Investing Building" to say that this exhibit, by reason of the well rendered drawings, is, from the viewpoint of architectural merit and artistic presentation, the most important in the entire exhibition.

In an equally insistent way, H. Van Buren Magonigle's McKinley Monument, at Canton, Ohio, is brought to the attention of the visitor. This splendid memorial is shown by but one illustration, yet its presentation is as satisfactory, owing to the well rendered study, as others shown by more numerous and less attractive illustrations.

These renderings, we are informed, were executed by Birch Burdette Long.

Another attractive exhibit of a fine subject is No. 108, a rendering by D. A. Gregg, of a perspective view of an American Cathedral, by Brigham, Coveney & Bisbee. This is a splendidly designed structure.

The southwest wall of the gallery is hung with more than twenty splendidly executed drawings and photographs of the completed work of Cram, Goodhue and Ferguson. The work of these men always present the best examples of the Gothic, and the architectural student may profitably spend some time in a study of this exhibit.

Elevations and plans of the proposed St. Thomas Church, New York city, and the Russell Sage Memorial Church, are of special interest, although the Villa at Montécito, California, should not be overlooked.

Sixteen large photographs of recently completed work by Governor Atterbury are all good examples, particularly a house at Locust Valley, Long Island, which is very cleverly designed.

A writer in a recent issue of a magazine devoted to the house and its surroundings takes occasion to comment on what he believes is the lack of artistic appreciation by architects. We suggest he visit this exhibition, that he may learn how groundless are his fears. No exhibition of the Architectural League has shown as conclusively as the present one the successful combining of the practical with the artistic.

Mr. Atterbury's splendid houses are in excellent company, as there are very many good examples of domestic architecture by other men. If we are to define the special line of progress shown this year, we unhesitatingly state it is in the designing of the country house. Throughout the exhibition there are many well designed country houses, most attractively shown.

From the country house to the lofty office building is a



CHAPEL AT WEST POINT.

Cram, Goodhue & Ferguson, Architects, New York.

wide digression, but the color sketch of Clinton & Russell's Church Street Terminal Building, which hangs neighboring Mr. Atterbury's exhibit, claims attention by reason of the artistic presentation of this splendid structure.

The civic pride of Buffalo in its McKinley Monument is well sustained by Carrère & Hastings' presentation of this subject. Photographs of the ensemble, detail of base and supporting figures are very interesting.

This firm also shows a splendidly designed tomb erected at Woodlawn Cemetery. A beautiful example, well designed and proportioned and admirably placed. It carries with it a conviction of good grouping, and the ensemble leaves nothing to be desired. A most satisfactory and enduring work.

The Maryland Institute at Baltimore, by Pell & Corbett, is presented in a manner that gives a clear conception of the building from the competitive sketch to the completed work. This is a good design, well worked out. This exhibit might serve as a model for the entire exhibition. It is one of the few instances where a comprehensive idea can be obtained of the work illustrated.

No. 644, a proposed country house at Tuxedo Park, New York, by Walker & Gillette, is a most picturesque and satisfactory one, shown in a well-rendered sketch.

In looking through the various galleries it is with some surprise we notice that on several of the mounts of

the photographs exhibited there appear advertisements of makers of building material. We are quite sure these have escaped the notice of the jury of selection and also that of the hanging committee.

The eight frames forming the exhibition of Tracy & Swartwout are of particular interest and a valuable part of this year's exhibition.

No. 607, a front elevation of Stamford National Bank, is very well conceived and executed.

No. 606, front elevation of the National Metropolitan Bank, Washington, D. C., is a most dignified and solidly designed building.

In the perspective view of the Biology and Geology Building at Princeton University, Parrish & Schroeder have evolved a most dignified and satisfactory result.

A series of photographs illustrating the Carnegie Library Building at Pittsburg are shown by Alden & Harlow. Of these the Music Hall entrance is most notable, being a most acceptable design.

Albert Kelsey and Paul P. Cret show the front elevation and second floor plan of the building for the International Bureau of American Republics. This is the premiated design, securing the award over one hundred and thirty competitors, probably the largest competition ever held in Washington, D. C. This building will, when completed, occupy a commanding site facing the "White Lot," and will materially add to the architectural features of the nation's capital.

The work of Howells & Stokes, always dignified and well shown, is no exception in this exhibition over former ones. A splendidly drawn bird's-eye view of a part of the city of Seattle, Washington, and a general ground plan, both on a large scale, present most attractively the approved design for the development of the old State University site at Seattle.

In a forthcoming issue of THE AMERICAN ARCHITECT will be presented a full illustration and description of this work.

Aymar Embury II. shows six frames of sanely designed buildings, No. 235, a house for Mr. Charles E. Bayliss, being particularly noticeable.

Equally satisfactory is the Peabody Library, Athens, Ga., by Haralson Blickley.

W. W. Bosworth, F. H. Bosworth, Jr., and Carlton Green, C.E., associated, exhibit a series of photographs



DETAIL OF SCULPTURE ON CONNECTICUT STATE ARMORY.
Benjamin Wistar Morris, Architect, New York.

of an asylum for the New York Magdalen Benevolent Society at Inwood, New York. We consider this exhibit entitled to the prominent place assigned it.

Another exhibit by W. W. Bosworth and Jarvis Hunt is equally satisfactory. This is the proposed building

for the National City Bank, this city. A most satisfactory solution of the combined bank and office building problem. A number of recently erected banks are shown in this exhibition, all of them dignified, well-constructed buildings, and each fulfilling in an able degree the requirements of location, site and general conditions.

The State Bank building at Hartford, Conn., by Benjamin Wistar Morris, is one of these, and fully up to the reputation of this architect.

Delano & Aldrich show a number of interesting views of completed work. Among them is a frame of eight photographs of the Philadelphia Orphan Asylum. This is a well-handled Colonial treatment for a small hospital.

A house recently erected at Cedarhurst, Long Island, and designed by Ewing & Chappell, is another one of the numerous good examples shown.

The work shown by architects of neighboring cities is all of much interest. The measured drawings of the Berkeley Building, Boston, by Codman & Despradille, is a very successful attempt to adapt material to the requirements of construction.

The pencil sketches, made in various foreign cities, by Vernon Howe Bailey are an interesting lot

and, aside from their architectural value, display fine artistic ability. They are very good.

A number of examples of municipal buildings for various purposes are shown. These are all of great interest, particularly No. 318, the First Precinct Police Station, by Hunt & Hunt, and five frames by Lord & Hewlett, showing the Portchester Fire House and Amusement Hall and the Brooklyn Municipal Building.

Nos. 336 and 337, plans and photographs of the Town Hall at Stamford, by Josselyn & Mellén, is another good example of a well-designed municipal building.

Kenneth M. Murchison's four illustrations of work for the D., L. & W. R. R. are a dignified and very satisfactory lot. They illustrate completed structures and show the interior of the Hoboken terminal, and also quarter scale drawings and elevations of the Scranton station for the company.

No. 628, a Celtic cross for a monument, by Hobart B. Upjohn, is a beautifully designed subject, and denotes careful study and artistic perception.

The plan and elevation of the Vanderbilt University

at Nashville, Tenn., is a dignified and well-thought-out solution of an interesting problem.

The monuments and mausoleums shown at this exhibition evidence rare architectural skill in this class of work, always interesting and affording opportunities for artistic effect. The Hanna mausoleum at Cleveland, Ohio, designed by Henry Bacon, has been well done, and is shown by working drawings and photographs of the finished work.

Through the munificence of Andrew Carnegie and other public-spirited citizens and communities there has been erected during recent years a number of libraries, from the modest town library to the pretentious State institution. Familiarity with this work teaches that a certain type has been evolved and in most cases worked out to a monotonous degree. When originality of treat-

ment is shown in his class of work, as, for example, the library building for the city of Springfield, Mass., designed by Edward L. Tilton, it is worthy of more than passing comment.

It is with some surprise that we note the absence from the list of exhibitors of the names of many men high in the architectural profession. This is to be regretted. It is equally re-

grettable that other men of equal eminence have sent to represent them the least dignified examples of their recent work. Whether this is modesty or carelessness as to the opinion of the public in general, we are, of course, unable to say. But it is quite evident that the number of large and dignified exhibits from representative firms is not as great as in earlier exhibitions.

The various prizes were awarded as follows:

The President's prize for mural painting was awarded to Hugo Ballin, of New York.

Special mention is made of the work submitted by Anna T. Lang, of Philadelphia, "hors concours," by reason of the fact that the competitor is not a member of the League.

The Henry O. Avery prize for sculpture was awarded to Charles Carey Rumsey, of New York.

Owing to the quality of the work submitted, the gold medal in architectural design was not awarded.

The silver medal in architectural design was awarded to Herman Kahle, of Columbia University.



THE LAST SAY OF MOSES.

John La Farge, New York.

Copyright, 1906, by John La Farge.

In the competition for the special prize offered for the best design submitted by an architect, sculptor and mural painter, in collaboration, the prize of \$300 was awarded to Henry Bacon, architect; Evelyn B. Longman, sculptor, and Milton H. Bancroft, mural painter.

The schools of architecture represented were those of Columbia and Cornell universities, the Carnegie Technical Schools and the Pratt Institute of Brooklyn. These were all shown in the rooms of the National Sculpture Society, on the right of the entrance hall. The critical attention bestowed on these by younger members of the profession and by students, as well as many older members, justifies the criticism we have made as to the lack of just such technical material in the main exhibition galleries. Space will not permit any extended criticism of this work. We can only add that it was of excellent character and proved that there are among the rising generation keen minds, with both inventive and analytical abilities to keep the profession up to its present high standard and help in the creation for this country of an architecture that will become distinctive—a consummation devoutly to be wished.

No description of this exhibition would be complete without mention of the sculpture and mural paintings which form so important a part.

Daniel Chester French's two groups, "Jurisprudence" and "Commerce," modeled for the new Federal Building, Cleveland, Ohio, of which Arnold W. Brunner is the architect, are, like everything this man models, above criticism. To say that they are fully equal if not better than those now in place on the Custom House, this city, is to merely emphasize the fact that they are later works. Mr. French seems to always advance. His art never halts.

The pediment for the Cleveland Trust Company (George B. Post & Sons, architects), modeled by Karl Bitter, is another fine example. The model for this forms the top of the frame for Mr. Herter's large decoration, already referred to.

In recent large buildings the application of sculptured figures to the ornament of the exterior has not in every instance been followed by the happiest result. Where a number of figures have been placed on the sky-line, the fact that each figure has been done by a different sculptor has resulted in confusion of lines and an unfortunate ensemble, something never intended nor foreseen by the architect. The fact that he passed on the models does not convict him of any lack of artistic perception. All of the figures are good as units, but when placed together on one building the difference in composition has revealed lines that almost amount to distortion in the general effect of the façade.

The figures by Herbert Adams, typifying the philosophy, the sculpture and the architecture of the Greeks, are splendidly modeled, and prove the contention that in such matters one sculptor is better than many. The lines of these figures would in no way lead to confusion when placed on the façade of a building, and the "quietness" of their handling is in sharp distinction to many of the statuesque poses shown by some of the figures on public buildings.

Purely decorative in treatment, splendidly modeled, and what would make a most desirable frieze for a house of even moderate cost, is No. 361, by Isidor Konti. Mr. Konti and Mr. Bitter have shown in so many instances their splendid ability in the treatment of decorative motives that one is led to wonder why this form of interior

decoration is not more generally placed in modern houses.

Two large single figures, "Agriculture" and "Mining," by Augustus Lukeman, are in this sculptor's usual style, and will, with two others by the same artist, be placed on the façade of the Royal Bank building at Montreal, Canada.

No. 47, a drinking fountain, by Chester Beach, should find an early purchaser, if not already sold. This young



BASE OF STEWART MEMORIAL.
Moller & Smith, Architects, New York.
Charles Keck, Sculptor, New York.

man shows the greatest talent, and this fountain, called "Music," is one of the most admired decorative things in the exhibition.

Of the mural paintings, which make the South Gallery of a veritable riot of good color, that of the "Rattlewatch," painted by Francis Newton for the new Police Headquarters in this city, occupies the entire west wall. This is very fine in color. It depicts what was probably the first police in New Amsterdam. This picture is worth seeing and studying.

Nine panels by Robert V. V. Sewell are part of a series representing the life of a man from birth to old age, and also the twelve months. These are fine in color and technique and splendidly drawn. They appear, however, as at present placed, to be crowded in composition; there are too many figures, either completely shown or suggested, in the small space of each panel.

E. H. Blashfield's studies, twenty-six in number, would in themselves form an exhibition worth seeing. These Mr. Blashfield has made preparatory to his large decoration in the south end of the great hall of the College of the City of New York. The drawing is superb, and one looks forward with keenest interest to the completion of this, the latest of this gifted artist's decorative work.

If one is artistically inclined he will dwell on two small drawings by John La Farge, "The Last Say of Moses" and "Justinian." Beautifully grouped and, of course, splendidly executed.

Equally interesting is the decoration on the Essex County Court House, by Will H. Low, and the vigorous example of the work of Fred Dana Marsh, entitled "The Excavators."

Howard Russell Butler's decorative panel, "Sunrise," as at present placed suggests hardness of color. It carries out the Greek idea of the plunging white horses as typifying the cresting billows.

Space will not permit at this time a more extended notice of this exhibition.

To say that there are no subjects shown that should have adverse criticism would not be true. There are a few examples that lead us to wonder how they ever passed the jury and found lodgment in an exhibition of such high character. Where there is so much to commend we must refrain from dwelling on the very few examples that appear to us out of place and unfortunate in having been selected.

This exhibition had its formal opening at the dinner held in the Vanderbilt Gallery on Friday evening, January 31. More than two hundred members and guests were present. This function has become a recognized feature of the League exhibitions, and that held this year was, if possible, more enjoyable than its predecessors.

Mr. Thomas Hastings, the president, presided and introduced the various speakers.

The subject under discussion was "Art in Construction," and the speakers, Professor Burr, Department of Civil Engineering, Columbia University; O. F. Nichols, C.E.; Hamilton Wright Mabie, editor of *The Outlook*, and J. Hopkinson Smith.

During the progress of the exhibition there will be given a course of three lectures, as follows:

February 5, "Early and Middle Periods of the Architecture of India," by C. W. Stoughton.

February 12, "The Evolution of Costume," by Mrs. Clara Ruge. The series to conclude on

February 19, "A Talk on Foundation Caissons," by Howard J. Cole.

Each succeeding year emphasizes the growing need of a home for the fine arts societies of this city—one that will meet the growing needs for exhibition space and house in one

building the various societies. Although the exhibition of the National Academy has been closed for more than a month, the daily press is printing letters from dissatisfied members whose accepted work was not hung for lack of space. And we expect to hear in like manner that there are many architects whose work was returned for similar reasons. That this was the case we know, and it was, perhaps, on this account that it was decided to make the present exhibition largely artistic, as the available space would not permit the committee to hang even a small proportion of the many frames sent in.

The annual report shows the finances of the League to be in splendid shape. The National Academy has many thousands of dollars to its credit. These societies, with others, and with the financial assistance of public-spirited men, might well bring to a speedy conclusion the plans so long under consideration for a suitable building, one that will provide space to accommodate the largest exhibition, and thus create an awakening by the public of an appreciation of art and the beautiful, that is so necessary before we can hope to induce our law-makers to show an interest in matters demanding attention and already too long delayed.



GARDEN AT RIDGEFIELD, CONN.
Grosvenor Atterbury, Architect, New York.



Copyright, 1908, by Francis Newton.

THE RATTLEWATCH OF NEW AMSTERDAM.

MURAL PAINTING FOR THE NEW POLICE HEADQUARTERS, NEW YORK.

Francis Newton, New York. Hoppin, Koen & Huntington, Architects, New York.

The Government's Work is the Identification of the Lesser Known Woods

THE following communication from the Forest Service Division of the United States Department of Agriculture, is of great interest and worthy of careful perusal.

The opportunity afforded architects and builders to prove, or prevent substitution of woods the determination of which requires technical knowledge, is valuable, and we suggest that our subscribers place their names and addresses on file with the Department to insure their receiving the various pamphlets to be issued and to mark their approval of this very valuable service on the part of the government.—ED.

WASHINGTON, JAN. —It is doubtful if any of the laboratories maintained by the government for scientific research are more unique in character, and yet bear promise of more important results, than one which has just been established in Washington by the United States Forest Service for investigating the structure of commercially important woods.

Laymen will not understand the significance of the proposed investigations carried on in this laboratory so quickly as architects, builders and other wood users, who in these days of growing scarcity of the more valu-



LIBRARY, CATHOLIC SUMMER SCHOOL.
Arthur Dillon, Architect, New York.

able woods are seriously perplexed in identifying substitutes. Mistakes of this kind in identification have, in the last few years, in several instances, meant the loss of thousands of dollars, and many embarrassing law suits.

Nearly any user of lumber can recognize, and name off-hand, all the usual trees of the forest when he sees them growing, and not much difficulty is encountered in identifying the common kind of lumber in a mill yard because he knows the few trees from which the yard lumber comes. But common kinds are growing scarce, and woods not often cut heretofore are appearing in the markets. The most experienced men are sometimes puzzled when they try to identify them, and persons with less experience have still more trouble. Is a certain wood gum or elm? Is another cucumber, linn, or poplar? Is a stick sugar maple or red maple? Doubts may arise whether a piece is hemlock or spruce, or whether it is lodgepole pine or fir, or whether a shingle is cypress or cedar. A dealer may buy red oak and suspect that he is getting something else. There are thirty or more important species of oak. The best lumber dealer might not know which is which in the lumber pile, or, if he knows, he might not know how to prove it.

Many of these woods look alike, even to the trained eye of the millman or the builder, and yet they are widely different in value for certain purposes, and it is of the greatest importance to be able to distinguish them quickly

and certainly. Again, a new wood may come to a man's notice for the first time, and it may be necessary for him to decide what it is and what it is worth.

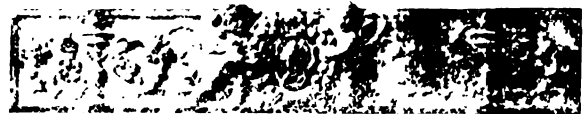


SEAL OF COOK COUNTY, ILLINOIS.
H. A. MacNell, Sculptor, New York.

The government has been helping individual lumber users for some time, but the facilities have not been near so complete as they are now. It is to meet such needs and answer such questions, that the Forest Service has established the laboratory, and placed it in charge of a trained dendrologist. Architects, lumbermen, manufacturers, and makers of woodware are already sending in samples of wood for identification, and asking if there are not some structural characters by means of which such woods may be conveniently separated for relative species having greater or less value for some specific purpose.

The laboratory will investigate in a practical way. The structure of the woods, sections lengthwise and crosswise, will be studied so as to separate by structure alone the various species of a genus. Analytical keys to the trees of each group will be worked out. These will be based on the arrangement and character of the pores discernible to the naked eye, or by a hand lens.

The results will be published from time to time with good illustrations and placed at the disposal of lumber users. After all the important groups of wood, such as oaks, pines and firs, have been studied and the results



published separately, the several monographs will be collected and published in one volume.

A work of this character has long been in demand by architects, builders and other users of lumber. It will, in most cases, enable even a non-technically trained man to determine quite readily the wood he deals with by means of an ordinary hand lens and by comparing the wood in question with the photographs of cross and long sections given in these monographs.

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ILLUSTRATIONS:

Eight plates and text cuts illustrating the twenty-third annual exhibition of the Architectural League of New York.

Additional: The City Investing Building, New York, N. Y.: Four plates.

A GROWING appreciation of art, particularly that form of art which has its application in the establishment of civic centers, is one of the most hopeful and significant indications of an approaching era when exterior appearances of structures as well as their form and arrangement will receive the serious and careful attention deserved. For while the development of artistic exterior effects in cities and the great æsthetic value of form and arrangement applied to public buildings has received some measure of consideration for more than a decade it is only within a very recent period that they can be said to have become generally recognized. Of late the evidences that utility and economy alone are no longer enthroned as dictators over the realm of public and private construction and improvement are so numerous and apparent that they can hardly have escaped the attention of even the most casual observer.

IT is therefore with some surprise, after considering the civic centers that are being planned and enthusiastically developed in a number of the larger and more important cities, while others appreciating the popular feeling and demand are planning future developments along lines calculated to establish higher standards of municipal art, that we read in a recent paper another

installment of the tirade which has been periodically directed, not only against the plan proposed for beautifying this nation's capitol city, but against its authors as well. These self-constituted critics by their intemperate and vituperative attacks seem to have conclusively demonstrated their own conspicuous unfitness, and Congress by tolerating if not freely indorsing their conduct gives evidences that as a body it is totally unqualified to pass judgment on matters artistic or involving to any degree æsthetic considerations. There is probably no city in the world offering greater opportunities for the artistic grouping of its public buildings than Washington and that these opportunities are in no wise neglected in the plan proposed is the opinion of those best qualified to judge. The delay in the complete adoption of this scheme is undoubtedly a source of the keenest regret to all lovers of art and there is much evidence that public sentiment indorses this feeling. It is not surprising that the utilitarian requirements were first provided for in America, and matters artistic involving an outlay of public funds were once generally frowned upon, but since commercial and industrial needs are no longer a pressing necessity we find that more attention is properly being bestowed upon æsthetic considerations, and if Congress does not adequately represent the American people in this respect means must be devised to meet the deficiency. Perhaps a competent national art commission might be selected to which matters of this kind would be referred with better prospects of receiving wise and intelligent consideration.

THE twenty-third annual exhibition of the Architectural League of New York, referred to at considerable length elsewhere in these pages, is in some respects notable. In its great wealth of color and in its wonderfully extended scope including subjects which only by the most liberal interpretation could be considered as in any way allied to architecture, it more than equals any that have gone before. Mural paintings and sculpture are given especial prominence in the exhibition, perhaps an undue prominence, but if so the growing importance of these features in this country is only reflected by this fact. While a great variety of architectural subjects are presented, the manner and scope of the presentation consisting in most cases of a single water color or wash perspective or rendered elevation, or perhaps photograph, leaves much to be desired. After a careful perusal of the program and conditions of the exhibition in which especial emphasis is given to the desirability of fully illustrating each subject, giving plan section and scale details as well as elevation or perspective, a condition we most heartily endorse, we admit a measure of disappointment in the dearth of adequately illustrated subjects. Of course we realize that the co-operation of the profession is necessary to a complete realization of any plan of exhibition, but we are constrained to believe that this was not withheld to a degree that might be inferred by the walls of the exhibition gallery; and while space would not permit of a full presentation of all the subjects shown, the amount of space was probably known when the conditions of the exhibition were, as we believe, wisely formulated. Moreover, if some few of the numerous subjects presented in some instances by one author had been omitted, more space would have been available and at the same time the occasion for many cynical remarks avoided.

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Recent Views as to the Origin of the Greek Temple

By DR. ALEXANDER F. CHAMBERLAIN, Assistant Professor of Anthropology, Clark University, Worcester, Mass.

GREEK genius was brought a little nearer that of the commonalty of mankind, some years ago, by the discovery that marble statues were painted red in imitation of the wooden human figures long after marble had come into use as a material for sculpture. It now seems as if the Greek temple was to be recognized as the imitation of something previously existing, and that once again the "gulf" over which the Greek mind is supposed to have suddenly leaped has been reduced to quite ordinary human dimensions. It has long been customary to look upon the Greek temple as absolutely unique; the Doric temple, even if it was suggested by the rock-hewn tombs of Beni-Hassan in Upper Egypt, being, after all, unlike anything else in the world. But the numerous archeological investigations of the last few years have resulted in making it certain that many ideas, formerly

conceived of as strictly Hellenic or Egyptian, were rather Mediterranean or even European. And it is fair to argue that the Greek temple had behind it something that was not necessarily characteristic of the ancient Nile or Ægean alone. The more we know about the prehistoric Mediterranean area, the less are we inclined to attribute to one race or to one people the chief contributions to human civilization arising within its bounds.

In 1905, in an article in *Globus*, the German geographical and ethnological journal, Professor K. Fuchs put forward the theory that "the wooden prototype of the Greek temple was an *Almenhaus*, the house of a rich cattle-breeder of the central European plateau, whom a long winter compelled to lay in great stores of hay and forced to erect over the stable a large hay-loft which kept it warm." To central Europe belonged in ancient

times a house which was, "at the same time the primitive form of the modern Czik wood-houses, the ancient Greek temple, and several modern Alpine types of dwellings." Beginning with the gable, Professor Fuchs derives each prominent part of the Greek temple from corresponding portions of the prehistoric central European cattle-breeder's house, and really advances some very good arguments, as the illustrations to the article indicate, for the opinion held by him. Even the columns find their place



THE ACROPOLIS, ATHENS.

in this explanation, but not so satisfactorily as in the later theory of Sarasin. That the Greek temple had a wooden prototype is now beyond doubt, but it is by no means certain that its ancestor was the cattle-house of the natives of prehistoric central Europe, whatever their racial affinities were. Nevertheless, there are remarkable analogies between the prehistoric "winged house" and the ancient Greek peripteros. Fuch's theory, however, is rather "local," and therefore not so widely applicable as that of Sarasin.

Dr. Paul Sarasin, who, with his cousin Fritz, is well known for notable researches among the primitive peoples of Ceylon, Celebes, etc., propounded before the Berlin Anthropological Society in 1906 a new and attractive theory of the origin of the Doric temple, viz., from the "lake-dwelling," or "pile-dwelling," characteristic of certain regions of the ancient and the modern world. His essay, with numerous illustrations, has since been published in the *Zeitschrift für Ethnologie*. It deserves the careful perusal of every student of the history of art and architecture, for his intimate knowledge of the "pile-dwelling," particularly in Celebes, enables Dr. Sarasin to go into very interesting details in this matter, and to set forth his arguments in a most striking manner, enforced by the illustrations, which are very much to the point, and also somewhat convincing. According to Sarasin, the Greek temple with columns "is a highly idealized and conventionalized expression of the original pile-dwelling"—the columns are the piles, the ornamental superstructure the dwelling fixed upon them, the triglyphs the window-strips, the metope the partition, etc. In order to fully appreciate the merits of Sarasin's theory one must bring up before the mind the wooden forerunner of the Doric peripteros: "The columns were wooden pillars, the architraves wooden beams, the triglyphs wooden strips, the metopes boards with carved ornament; the wooden

roof was covered with mud-thatch, and the wooden ridge ended in a bird made of cut boards (the acroterion)." Reducing the height of the columns a little, and increasing somewhat that of the superstructure, one has a building strikingly similar to (in many respects identical with) the pile-dwelling. The figures of the temple of Poseidon at Paestum and a pile-dwelling in Central Celebes show this very clearly. And it should be said that the pile-dwellings of Indonesia, occurring on land as well as in water, represent better a "pile-dwelling period," than the "reconstructed" lake-dwellings of Switzerland. During the later stone age and the bronze age, Dr. Sarasin thinks, moreover, pile-dwellings of a sort comparable with those to be met with in Celebes, were found over a considerable portion of Europe, not merely in lakes, rivers, etc., but also in swamps, and on the dry land. Such a one was, apparently, the pile-dwelling of the Wauwyl bog investigated in 1904, and closely resembling the Celebean pile-dwelling of the marshy Lake Limbotto. In all probability there existed commonly in Europe to the end of the bronze age, and sporadically (in Hungary, for example) much later, pile-dwellings of the kind in question. In Greece and many other parts of the then known world, the original human dwelling was the house on piles, which, therefore, was also the first dwelling of the gods and the first temple—the orthodox temple, as Sarasin phases it—was a pile-dwelling. In very ingenious fashion Sarasin shows how the peculiarities of the various portions of the Greek temple can be developed from the pile-dwelling. The megaron, too, finds an analogue in the *lobo*, or "men's house" of Malaysia.

The simplest form of the column is, of course, the pile driven into the ground or resting upon it; the basis of the Ionic and Corinthian columns is to be seen in the stones placed under the piles to prevent too early decay, etc. The so-called *echinus*, the lower, round portion of the capital of the Doric column, corresponds to the round disc of stone or wood placed on top of the piles as a protection against rats, etc. The *abacus* has also its proto-



PARTHENON, ATHENS.

type in the pile-dwelling in the rest-piece for the beams, which is placed on the middle of the disc just described. The so-called proto-Doric columns of Egypt, which lack the *echinus*, go back, Sarasin suggests, to a pile-dwelling without such protective discs. The perpendicularity of the columns of the Ionic and Corinthian temples, as well as the slight upper inclination of the Doric, comes naturally enough from the conditions of the wooden piles and their arrangement. So also square columns and even fluting. The so-called *adricula*, according to Sarasin, is

derived not from the tent, as some have supposed, but from the small shade-roof seen in front of many Celebean pile-dwellings, under which the occupants sit protected from sun and rain. The "wall-temples" and the *cellæ* are easily developed from the open space under the dwelling in the pile-houses by building in between the columns—the prototypes are seen in the Celebean houses. The transformation of the upper part of the pile-dwelling, when no longer used for habitation, into the superstructure of the Greek temple with its ornamentation (the frieze has its forerunner in the pile-dwelling's wooden carvings, etc.) was easily possible with an artistically-minded people. The substitution of stone for wood, Dr. Sarasin thinks, may have been an Egyptian invention.

If the present writer may be permitted to add to the ideas set forth by Dr. Sarasin, he would like to suggest the possibility of the existence of pile-dwellings in caves (such have been reported from prehistoric Sicily) having had something to do with the development of the original wooden pile-dwelling into the stone temple.

The theory of Sarasin has the advantage of proposing as the original prototype of the Greek temple something that was more or less cosmopolitan, a building that was common and natural over a large portion of the prehistoric world, and not some merely "local" model. As Dr. Sarasin points out, the pile-dwellings served also as

prototype of the Chinese and Japanese temples (in this case, since they are mostly constructed of wood the likeness is even more striking); likewise in Farther India, Hindustan, Arabia, Asia Minor, Egypt, etc., and even in prehistoric America. Moreover, not merely the "long temple," but the "round temple," goes back to the pile-house, as may be seen from the round pile-dwellings ascribed to the land of Punt, in Egyptian pictures dating from ca. 1500 B.C., which are practically identical in shape, etc., with pile-dwellings still to be seen in the Nicobar Islands and in certain parts of Africa.

Taken altogether, Sarasin's essay is one of the most interesting and suggestive contributions to the literature of the evolution of architecture that has appeared in a generation, and it illustrates the way in which the anthropological investigator can assist in the solution of many puzzling problems, which meet with no successful interpretation at the hands of the closet-student or the biased classicist. Dr. Sarasin has given but another proof of the fact that the highest genius of the ancient Greeks lay not in inventing great or beautiful things out-of-hand, but in idealizing, beautifying and harmonizing what had already long existed in common and widespread forms and fashions. And to that great art no human race is utterly a stranger; and many of them are much nearer the Greeks than most of us believe.—*Popular Science Monthly*.

The Purposeful and Appropriate in Architecture

AN editorial in a recent issue of one of the leading engineering papers dwells at length on what is termed "the decorative in engineering works," and while it is somewhat difficult to determine from the article just what position the author intends to assume with reference to some of the questions discussed, there are statements made which, it would seem, might bear some investigation before acceptance. He cites, for example, a class of architects who lay out pumping stations on pretty nearly the lines of a Gothic chapel, suppress all useful window spaces and take chances on the convenience of the plant in operation. Since this would be a serious charge to answer if true, and a libel on the architectural profession if untrue, it might be wise to look into the matter. Where is the work of these men? For unless it can be definitely shown that these things are actually being done, not once, but repeatedly, it is manifestly unfair to state that such a class of architects exist. The author announces: "One thing often lost sight of is that many elements now chiefly decorative were once purposeful, and that in losing their purpose they have lost their chief artistic interest, so that their use is now merely stupidly imitative. It is the common fault of the unpractical tacitly to assume artistic canons that are two or three hundred years out of date, so far as reasons for their origin are concerned. Methods and materials for structures have changed very rapidly during the last century, and the purposeful and appropriate, which is really the artistic, has changed with them. The pointed arch may or may not be beautiful in itself, but it certainly has no structural appropriateness in a modern steel building."

This is interesting and informing, but we wish the author had been more explicit. The statement as it

stands is almost too broad and general, and no doubt much difficulty will be found in identifying the many elements in use that have lost both their purpose and their chief artistic interest, so that their use is now merely stupidly imitative. Many will recognize, for instance, that the terra-cotta brackets under a terra-cotta cornice are, under present-day conditions, ordinarily supported by hidden steel work, whereas they were designed in their stone prototype to support the cornice, but will be uncertain in the absence of specific information whether the use of brackets under a cornice when supported by steel work is stupidly imitative or not. Similarly we can imagine the architect's perplexity when confronted with the problem of treating a large public room containing a number of steel supporting columns standing free. Perhaps he had intended to fireproof the columns and surround them with carefully proportioned terra-cotta or marble columns carrying finely modeled or carved caps and bases; but would this not be stupidly imitative, and would he not be considered two or three hundred years out of date? Since the purposeful is the really artistic, according to the author, would he not be safer and perchance gain the approval of the true artists and advanced thinkers by simply furring and plastering the steel columns?

And concerning the pointed arch, which the author positively declares has no structural appropriateness in modern steel buildings: We feel confident that there are those in the profession who will be inclined to inquire why they are to be deprived of this form. The statement is so positive there can be little doubt that good and sufficient reasons will be forthcoming, but until they are given in full there is bound to be some curiosity among

the skeptical. It will be readily granted that an opening in the wall of even a modern steel building must be closed at the top in some way—by lintel, by flat arch, by circular arch, segmental arch, elliptical arch, pointed arch or other



RYERSON PHYSICAL LABORATORY, UNIVERSITY OF CHICAGO.

form—and we rather anticipate some unwillingness to concede this apparent discrimination against the pointed arch. Of course, if the pointed arch must be discarded, the architectural style, with its numerous modifications and adaptations, to which it belongs, must be discarded with it, and, since the majority of modern buildings are steel buildings, it would seem like practically abolishing Gothic. It might be suggested by one disposed to argue that among modern steel buildings there are a number designed either frankly Gothic or with Gothic feeling, and having incorporated in them to some extent this fatal feature of a pointed arch. For example, the Trinity Building and its counterpart in this city, where this feature is used in its most aggravated form—that of the lancet window—have been pronounced by able critics eminently successful from an artistic viewpoint, and the pointed arch could hardly be said to affect the utilitarian values. In what particular, then, do they fail? Likewise there are numerous instances of the pointed arch in the new College of the City of New York buildings, Military Academy buildings at West Point, Chicago University buildings, Renolds Club building, Chicago; Wagoner Undertaking Company building, St. Louis; Bush Company office building, New York; New York school buildings and many others, all of which are modern steel buildings, and to learn that the designs are inap-

propriate cannot but be a source of deep humiliation to their respective designers.

The author states and reiterates that the study of structures, and especially engineering works, should begin at the utilitarian end: that first the uses to which the structure is to be put must receive consideration and the working plant be determined, after which the architect may properly be called upon to house the plant. It might well be said that as long as this method of procedure is followed we will inevitably continue to have the countless disproportioned, irregular, ugly and unattractive monuments to the conceit and self-sufficiency of various engineers which dot the country and constitute the chief anxiety—we might say despair—of those public-spirited citizens who by their energy and toil have awakened an interest in art and architecture throughout the land, especially in civic art and municipal architecture. That this awakening or keener appreciation of the value of the artistic and symmetrical makes for progress and advancement there can be no question, and therefore it should be fostered. Instead of the engineer forcing the matter by first laying out the plant and then calling upon the architect to do the best he can with it—although, perhaps, the proportions are such that a building of pleasing appearance is impossible—the engineer and the architect should



OFFICES OF THE BUSH CO., NEW YORK.

consult and work together from the start, each proposing tentative schemes that would serve his purposes, and each modifying and revising as need be until a solution suitable and satisfactory as serving the purposes of both is found,

when a definite plan can be decided upon and then a building more valuable in the final analysis will be produced than if either architect or engineer goes forward independently. In fact, this plan is being followed with



TRINITY BUILDING, NEW YORK.

gratifying results by the more progressive and better equipped offices, but we find that in the majority of cases it is the architect who, even when given supreme authority by the owner, has collaborated with an engineer. Unfortunately, when for real or imaginary reasons, the engineer has been placed first in authority, he has failed in many cases to realize his own limitations, and has either proceeded according to his own lights to the lamentable end, or, as advocated by the author of the article, has gone so far in arranging his own requirements arbitrarily and thus largely fixing the lines and proportions of the structure as to render the services of an architect of little value.

As an illustration of this latter condition might be mentioned the towers of the Williamsburg Bridge, New York, while an excellent example of the results obtained where architects and engineers work together with unity of purpose from the beginning is shown by the Ontario Power Company's plant at Niagara Falls.

The author calls attention to two libraries, one of which he acknowledges is admirable in the matter of design and altogether a notable building architecturally, but the book stacks are located at some distance from the delivery

desk. In the other building the stacks are conveniently located, but in point of architectural design the building is woefully lacking, a fact which does not seem to disturb the author so much as the plan of the first, which he declares is deficient. Again we feel that more explicit information should be given the reader to enable him to justify the conclusion in his own mind. If we are not mistaken, the library complained of was designed under rigid requirements of site, fixing general form and plan of building, and also to meet other requirements than those of facility in the delivery of books to the patrons. Whether these various requirements were served in the best possible way by the plan adopted we, of course, cannot say, but as far as the delivery of books from stacks not directly adjacent to the delivery desk is concerned, it could only mean, at most, the employment of three or four more comparatively cheap clerks, whose salaries added to or subtracted from the total cost of maintaining this splendid institution would hardly be noticed. At any rate, if the plan as adopted made it possible to produce a building considered by authorities one of the most notable contributions to architecture and art in this country, is the slightly increased cost of maintenance not justified? Higher prices are being paid for contributions less worthy.

A theory which seems to run more or less throughout the article, and which is announced in the closing sentence, has apparently commended itself to the author, and we believe has been quoted widely among men who have not, perhaps, had the time or opportunity to submit the matter to careful analysis or deliberate, independent thought. This theory, sometimes credited to Socrates, is based upon the premise that only those materials, objects or forms which are of use are beautiful. In other words, beauty involves the necessity of use. We see the acceptance of this theory in the case of the elements considered by the author stupidly imitative, referred to above. To follow this theory to its logical conclusion, anything that has no work to perform is unsightly, and the most economical design, the design in which the highest efficiency of materials is obtained, is the most beautiful.

Little thought is required to convince the average person that this is a fallacy, and a position taken on such



THE WILLIAMSBURG BRIDGE, NEW YORK.

grounds is obviously untenable. Consider, for example, Greek architecture of the fifth century B. C. While the beauty of line and the marvelously perfect proportions of the famous Greek temples are justly and universally admired, there are no evidences that these proportions were in any way dictated by the strength of materials or the necessities of structure. The columns of the Parthenon, one of the most celebrated temples of this epoch,

were more than six feet in diameter and only thirty-four feet high, while they were spaced little more than a column diameter apart. Here we find a building conceded to be one of the most beautiful of antiquity unsurpassed in the excellence of its proportions after the lapse of twenty-four hundred years. Does the author believe that an error was made by the great Ictinus in proportioning the columns of Pentelic marble to support the slight structure of the Parthenon? Would he have us believe that the marble was used in such great mass for imaginary reasons of structure? The Athenians of that age were the most cultivated and intellectual race known to history, and to suggest that one of the most gifted architects of that incomparably profound and erudite nation did not know with far greater certainty than any modern engineer that much smaller columns than those used, spaced much farther apart, would very readily have supported the structure, would be equivalent to questioning the immortal Shakespeare's knowledge of English. And if there is still a lingering doubt, if the slightest suspicion remains that the architects of that age were not, perhaps, as scientific as they were artistic, that, after all, they used



ONTARIO POWER CO.'S POWER HOUSE, NIAGARA FALLS, ONT.

materials in such mass through ignorance of their strength, it must be inevitably removed by considering the contemporaneous Ionic temples, where smaller columns are used at much greater intervals to support a

much greater load. And so it would appear as an incontrovertible fact that the size and spacing of the columns of the Parthenon were not determined by any utilitarian considerations or necessities of structure, but purely and solely for reasons of appearance, of proportion, of beauty.

This is but an example, and they are legion, where the utility of various members has little or nothing to do with the beauty of the structure, and it seems most unfortunate that a theory so dangerous as this should be promulgated by the author in a quarter where the tendency is to accept, since it offers justification for some of the most monstrous constructions reared by man. They are utilitarian, their lines follow those of stress in the structure; but that they might also have been pleasing in appearance, or at least inoffensive, is becoming generally recognized, and anything tending to check the growing appreciation of this fact is against progress and inimical.

ILLUSTRATIONS

MANUFACTURES AND LIBERAL ARTS BUILDING, NEW YORK STATE FAIR GROUNDS, SYRACUSE, N. Y.

The illustrations shown are the premeditated designs of the first of a group of buildings to be erected at the New York State Fair Grounds, Syracuse, N. Y., after plans by Messrs. Green & Wicks, architects, of Buffalo, N. Y.

The educational advantages of a well-conducted fair, county, State or international, cannot be disputed. Under the management of the New York Agricultural Society, New York State has for many years conducted an annual fair. Sometimes held in Elmira, some years in Rochester, others in Syracuse, it thrived in spite of its changes of location. Originally under the charge of the Agricultural Society, its management was finally passed over to the State. The State selected Syracuse as a permanent location, and allowed frame buildings to be erected from time to time, but with no well-defined plans as to arrangement and without provision for delivering the exhibits other than by the main thoroughfares.

The damage and delay caused by this last and the increased exhibits and attendance—the records showing an attendance of 60,000 in one day in September, 1907—proved the necessity for more and better accommodations.

From the money which the fair turns into the State treasury appropriations are made as needed for repairs and maintenance, and when the request for more buildings was sent to Governor Hughes he took so comprehensive a view of the matter as to

authorize the State Fair Commission to thoroughly investigate with reference to an entire rearrangement which would express an harmonious development of grounds and buildings showing common sense in location and beauty in finish.

The result was the selection of the accompanying plans, submitted in a competition last November.

In reference to these plans Governor Hughes, in a letter to the Legislature, wrote: "I recommended last year that plans should be made for the comprehensive and adequate development of the State Fair in a manner which would avoid haphazard or ill-considered improvements merely designed to meet temporary exigencies.

"The development, of course, must be gradual, and without extravagance. But by making substantial progress each year, so that what is done will fit into a suitable, general plan, economy will be promoted and the result will be worthy of the State."

As this is a State institution, it is thought wise to erect permanent, dignified buildings, devoid of ornament, yet of such design and proportion that the structures will to a degree indicate their functions in the character of the exterior as well as of the interior.

With the new arrangement each building is designed upon the unit principle, and all the buildings upon the group system. The courts about which the buildings are grouped are to be ample in size, thoroughly lighted and provided with fountains, band stands and other features to make them pleasing to all.

The main entrance—an arched gateway with many smaller passes—leads into the Empire State Court, 500x700 feet.

At the left of the gateway is a two-story restaurant building and the superintendent's quarters.

Occupying nearly the entire left side of the Empire State Court is the Manufactures and Liberal Arts Building, to start by covering an area of two acres and with provision for additions which will increase the area 35,000 square feet.

The State Institutions Building, connected by a short colonnade, comes next and completes this side of the Empire State Court.

A 500 foot long peristyle separates this court from the Horticultural Court. About the latter, which is semicircular in shape, are grouped respectively the Arts, Horticultural and Women's Buildings.

The Horticultural Building is designed to ultimately cover over 60,000 square feet, and its location at the center of the semicircular court makes it a notable feature in the group. The Arts and Women's Buildings, symmetrically placed in the semicircle, will be given the same exterior treatment and will cover 11,250 square feet.

The open-air theatre, seating 5,000 people, is also a prominent feature of this court, and is situated next to the long peristyles some distance in front of the Horticultural Building.

Nearly all the buildings are connected one with another by colonnades which will afford protection from sun or rain.

On the right hand side of the Empire State Court the building for Domestic Arts balances the one for State Institutions, and opposite the Manufactures Building are the Dairy and Poultry Buildings, with an entrance between to the live stock section. On the right of the entrance the Administration and Police Buildings balance the restaurant and superintendent's buildings at the left.

Large, convenient, well ventilated buildings for the live stock are grouped about their own court, at the end of which is reserved an area of 75,000 square feet for a building for show horses.

One hundred and ninety-seven thousand square feet of ground is set aside for farm implements.

The race track has connected with it, in addition to grand stand, judges' pavilion, etc., a covered judging ring larger than Madison Square Garden, where 7,000 people can be seated, and where there is storage room for display wagons to be used when the show horses are exhibited in the ring.

The Hospital Building, Police, Railroad, Model Farm Barn and other buildings will be proportioned and designed to suit their individual needs and to harmonize with their various groups.

An important feature of the service part of the new development will be the arrangement of railroad tracks and switches. A track will run entirely around the grounds, from which will be spurs to the various buildings and exhibits, so that loading and unloading can be done from the rear of these buildings. This keeps all dirt and refuse on the outside of the courts and buildings and allows the regular work to go on when the fair is open, and above all it prevents the teaming of heavy exhibits from cutting up the finished grounds and roads, which may always be kept in order.

By this new arrangement, too, all unsightly neighborhood views are effectually cut off. Fountains, band stands, flower beds and other decorative and useful features are provided to add to the general effect.

NEW JERSEY STATE NORMAL SCHOOL BUILDING, MONTCLAIR HEIGHTS, N. J.

This school building is being erected from plans prepared by and under the supervision of State Architect George E. Poole and Assistant State Architect Francis H. Bent. The site selected for the building is upon the highest part of a twenty-seven acre plot of hilly land, with a southern frontage overlooking a broad valley, and with a dense grove of trees forming a background. On account of the surroundings and of its adaptability to the conditions, the style selected for the design is the Mission style, with a touch of Spanish Renaissance detail.

The material of foundation walls is cast stone concrete 20 inches thick, the upper walls being of hard burned brick and the entire exterior walls covered with Portland cement stucco, with moulding, sills, lintels and ornamental portions cast in cement.

In front of the building, connecting the two end wings is a

broad esplanade 260 feet long and 44 feet wide, protected by a moulded and paneled concrete wall, from which cement steps descend to the lawn and drive.

The entire exterior, including terrace walls, etc., is to be covered with two coats of a brilliant white cold water paint, excepting the recess of front entrance and reveals of windows above, which are all in red brick.

The eaves project 5 feet, with copper gutter, and are supported on heavy sawed hard pine brackets, the rafter ends being exposed and sawed to a pattern, all the woodwork being stained a rich brown. The roof is in Spanish tile ventilating flechés being in wood and copper.

The building is 335 feet long and 133 feet deep, the centre and side wings projecting.

In the basement are manual training and domestic science rooms, four rooms for observation classes, locker and dressing rooms, showers, toilet, recreation and lunch rooms, and in the centre the blower fan and general electric service room.

On the main floor are the board room and principal's offices, directly at the main entrance, in the centre of the building. At this point centres the telephone service, which connects these offices with every part of the building and with the outside world. At the rear in the centre is the library, 32x60 feet. The study hall and gymnasium, each 57x76, running up through the first and second stories, are situated at either end of the building and are lighted by means of high circular headed windows. Each room has beamed ceilings, the side walls of gymnasium being finished in cream-colored vitrified brick, with all corners laid up with bull nose pattern. The study hall is plastered and finished in white and gold. Two large lecture rooms, eight class rooms, and several teachers' rooms complete the floor.

On the second floor directly over the library is the drawing room, with extra high ceiling and lighted by large windows to the north; directly adjoining this room are two photographic dark rooms, two lecture rooms with laboratories for chemistry, physics, botany zoology, etc., and several teachers' rooms are also provided.

As to the construction of the building, the appropriation was not sufficient to warrant a fireproof building, therefore it has been the aim to make the building as slow burning as possible.

The exterior walls are concrete and brick, covered with stucco and furred inside with 1½-inch plaster furring blocks. All interior partitions are of brick, except in several instances, where some of the ventilating flues are built of fireproof blocks, the floor beams are of wood supported by iron girders. By this method of fireproof interior walls and fireproof stairs, the various class rooms and corridors have been isolated from each other, so that flames would not make rapid headway. Fire lines have also been provided at either end of the building. The roof of the building is covered with red Spanish tile.

All toilet rooms have sanitary floors and the walls and ceilings are lined with white tile. All laboratory floors are of a seamless waterproof compound, making a smooth sanitary floor, and the walls are tiled.

The building is to be heated from a power house situated about 400 feet away, a high-pressure main running up to building and into fan rooms. Here are situated two large fans for driving the filtered warm air for ventilating purposes into the various rooms. In the roof space are the exhaust fans, with ducts leading to the three ventilating flechés on the roof. All rooms of every description throughout the building, and all toilet fixtures, are connected with these ventilators, but the ventilating system of the toilet rooms and fixtures are entirely separated from the ventilating system of the rest of the building. The main part of the heating is done by a system of direct heating surface, the fan system being used simply for ventilation.

All the furniture, laboratory fixtures, etc., have been specially designed and it has been the aim to make the building a model school building for normal purposes.

HOUSE OF JAMES HAMILTON, ESQ., DETROIT, MICH. MESSRS. STRATTON & BALDWIN, ARCHITECTS.

Garden front and floor plans are shown in this issue. For other views of this house see No. 1651, August 17, 1907.

Additional Illustrations in the International Edition.

COURT IN THE FAVA PALACE, BOLOGNA, ITALY.

COURT AND STAIRWAY, CHATEAU DI POPPI, AREZZO, ITALY.

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Additional (International Edition):

Court in the Fava Palace, Bologna, Italy.—Court and Stairway, Chateau di Poppi, Arezzo, Italy.

IN the current architectural press of Great Britain much space is given to the discussion of a report made by a commission appointed last June to consider the subject of architectural education at Cambridge University. Although this report has not been published, and its recommendations are more or less in doubt, it seems to have been assumed that a diploma was contemplated, and this fact has drawn forth a joint letter from three eminent architects, all university men, criticising the supposed intention of the university authorities, and setting up reasons for their opposition which in any event merit careful consideration. "Architecture," they point out, "is, after all, the art of design under severely limited conditions: that it has its own peculiar technique, just as the arts of painting and sculpture have theirs; and that, though it is very necessary for an architect to possess scientific knowledge of materials and of the laws that govern their use, the knowledge so acquired does not make him an architect. The quality of the architect, that which differentiates him from the engineer or from the professor of mechanics, is the imaginative use to which he puts his knowledge as an artist in pure form." The letter further draws attention to the desirability, even necessity, of a student receiving instruction from a practicing architect

where his training can be supplemented by practical demonstrations in the nature of buildings in actual course of construction.

IT seems to us the point is well taken. Architecture consists not alone in the ability to pass an examination in mathematics, applied mechanics, strength of materials, descriptive geometry, history of architecture and theory of art in relation to architectural design, or even the inventive power to produce architectural forms and the dextrous draughtsmanship necessary to present them; these are only the implements, the means to an end, and when the student has demonstrated his capacity and ability in all of these, which is about as far as the universities can take him, he is only half an architect. He has yet to make known his ability to use the implements, to avail himself of the means bestowed upon him by his technical training, in the actual construction of buildings before he can in all justice claim the title.

A MAN who had made a very exhaustive physical and chemical examination of marbles suitable for statuary purposes, who had made careful research to determine the exact grade of tool steel best suited to the sculptor's requirements, who had inquired minutely into the properties of various clays to ascertain their adaptability for modeling purposes, and who had made a most comprehensive study of line and form, and was capable of sketching a subject accurately, who had perhaps even conceived numerous artistic compositions, but who had never tried his skill in the execution of the work, who had never been responsible for results, would seem to be as deserving of the title of sculptor as is the graduate of the architectural school, be it ever so thorough, that of architect. We are not inclined to belittle the value of university training. It is excellent and in every way desirable, if not an absolute essential; but no one realizes more than the architect who was himself a university graduate a few years ago its limitations as regards the making of an architect.

IT sometimes appears that architecture in this country might be as greatly benefited by the expenditure of a certain amount annually to educate the public as by the establishment of scholarships and other means employed to prepare future members for usefulness in the profession. Precisely the manner in which this could be done is a subject requiring mature deliberation, but that it would be desirable, if a practical plan could be devised, there is little doubt. While the architect ordinarily exerts considerable influence with the owner, instances are not rare in which buildings are devoid of real architectural merit solely on account of the lack of appreciation on the part of the owner of the value of architectural and æsthetic considerations and his unwillingness to countenance any decorative treatment or the slightest elaboration whatever, believing it would add to the cost in a manner that would bring no return. It was not under such conditions that great achievements in architecture were attained in the past, and it is not believed that they may be anticipated under them in the future, and any means that can be devised or suggested calculated to educate the public to a greater appreciation of the real inherent value attaching to an architecturally commendable building will be worthy of careful consideration.

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The Building of the Church

By J. A. SCHWEINFURTH

THE congregation of the ——— Church of the City of ——— after many years of deliberation have decided to build a new church edifice. The usual Building Committee is appointed, consisting of the most wealthy and influential members. Without entering into the interesting study of the personnel of this Committee, sufficient to say that it is composed of two lawyers who have just built residences for themselves and therefore “know,” two merchants who have built investment apartment houses from “private plans,” a butcher, a baker and a candlestick maker, a very successful soap maker, a “gentleman of leisure” and the minister. Let us see how they proceed to build their new house of worship. Back of this Committee are other committees of the church, Advisory and Prudential, Trustees, Deacons or perhaps Wardens and Vestrymen, as the case may be, and back of these still is the whole congregation of 900. It will be seen that here is quite a formidable array, all to be pleased and satisfied. Can it be done without disrupting the church? Is it possible for a church to be built on business lines? Can they fix a definite amount of cost, and have a church built within this sum, completed, not left for future generations to finish and pay for? Can

they limit their desires to their means, as prudent business men do?

The news of the proposed building is published in the newspapers, and straightway the members of the Committee note the increase in the size of their mail, not only from desirous architects, but from all dealers in all sorts of materials which enter into church construction and equipment, and they are at once impressed with the responsibility of their position. How shall they choose an architect? One member has a nephew just back from the Beaux Arts, wearing with conspicuous fortitude his heavy laurels, who is “favorably mentioned” for the work. Another friend advises the Committee not to employ an architect at all, as he could make a rough sketch, “have a couple of the boys do the drawing” and there you are, a great saving of thousands of dollars often wasted on an architect, for “just making a fine drawing;” besides, there would be less trouble with the builder, things would go smoother, and no “extras” result. If you employ an architect, the extras will more than equal the contract amount. The acoustics, heating and ventilation will be bad, and you cannot get the architect to do anything you want. Architects are cranky and object to carrying out

your ideas, etc. This statement is received with grave concern, and the seed thus sown bears fruit later. Another member has a friend who will be glad to submit plans for nothing. "No cure, no pay." Another has a young and brilliant friend, a draughtsman in the office of Messrs. ———, architects, who, having no office rent and other expenses of extravagant architects' offices to pay, will do the work "reasonable." Many others desire to have a competition and they back up their wishes with the statement that the Committee have received many letters and importunities from architects desiring to enter a competition, that the Committee will have the advan-



WORCESTER CATHEDRAL.

tage of many men's study and work free, and can pick out what they like, and "get the most for their money." We have to compete in the market to dispose of our goods, why should not architects do so, too? These views are received with general favor by all but the "gentleman," who rose, and after the usual preliminary cough, said:

"Gentlemen, I was young once, now I am old. I was on the Building Committee of 'All Sorts' Church' way back in 189—, and I have had experience. We canvassed the situation well, and found that the best architects were as a rule opposed to competitions, and entered them only under certain conditions, which we found onerous and would necessitate the expenditure of money and the retaining of a 'professional adviser' to decide for us, or help us to decide. We thought we could decide ourselves, and did not see then why we should pay several architects for submitting sketches, when there were so many very anxious to submit sketches for nothing. We determined to receive sketches from those who wished to submit them, and were simply astonished at the number of plans received. Among them were some of the most beautiful drawings I have ever seen. We selected the most beautiful drawing, of course, as it took us by storm. It was a marvelous conception and carried out with consummate skill. The pen and ink work on the perspective view was simply wonderful. We asked for a church to be built for \$75,000, and here we had a grand scheme—church with a tower 150 feet high, seating 900 people, with a baptistry, Sunday school, social hall, kitchen, coat rooms, parish house, cloisters, minister's residence, all surrounding a beautifully designed Church Close. Oh, it was quite a dream of ecclesiastical loveliness, such as we had never seen before! Built in seam-face granite backed up with brick, with stone tracery, we were assured that it could be built easily within the \$75,000 and have enough left over to put in 'Tiffany windows,' which we adored.

all over the church, and to send the Committee to New York to buy them, and then enough left over to contribute to Foreign Missions. It was a bargain. The modest efforts of the other competitors sunk into insignificance beside this great scheme. Here was a master of Gothic at last, and one who could get us something for our money. A new era had set in. We would have such a church as had never been dreamed of before. The other competitors were too modest, they had too high ideas as to cost, they built their walls too thick, had wasted too much money on construction, their foundations were too heavy, their heating and ventilation cost too much, and not enough for carving and decoration. On the other hand, the successful architects had actually saved money in many ways, for instance they would plaster direct on solid masonry walls, saving furring and lathing; they would omit plastering on the roof and show the under side of the roof boarding finished, without the expense of an air space, furring, nonconducting felt or paper, lath or plaster, and many other economies which we thought showed a fine insight into true economy on their part. We instructed the architects to make the drawings and get bids, and, much to our surprise, instead of being \$75,000, it was \$150,000. The drawings were changed and various features omitted, and the cost was reduced to \$140,000, so after many meetings of the Committee, interviews with the architect, and numerous alternative drawings, all extending over a year, we decided to build as much of the main church as we could, and omit the tower and other features. Our minister thought it was too grand a scheme to abandon, it would be such an incentive to the people to give, to practice self-denial, to live up to. It might take years to complete it—but what a noble end to attain! We found we did not have enough to build the main church entire, so we built as much of it as we could in stone, and finished out, temporarily, the end with shingles, etc. Later on, the connection between the two constructions opened up and let in the storm and our \$10,000 organ was damaged. The plastering on the walls direct did not prevent the moisture from penetrating, and we had to cover part of the masonry with metal to prevent other damage. The acoustics were far from satisfactory. They are now trying to raise money to realize the rest of the architect's dream, and despite the many cake and candy sales, readings, socials, tableaux, and Talks on Art, the departure hence of many wealthy members, and the constant 'appeals' to the congregation, the church still remains unfinished. A finished church attracts people, as they know they will not be constantly importuned for this; or for foreign and domestic missions, as well as for the thousand and one requests constantly being made by the churches for their work. This, gentlemen of the Building Committee," said the 'gentleman of leisure,' "was the result. Let us therefore profit by this experience and choose an *architect*. Let us tell him frankly and briefly what accommodations we require, what we want to spend, this much and no more, and let us see what he can produce. We know what we require in the way of accommodations and he can put it on paper in architectural form for us, and we can criticize this practical part with intelligence if we will take time to understand his drawings. He may not make a plan at first trial which is satisfactory, but we can give him valuable suggestions. A church which would suit us, would not suit some other people. Why should we desire many architects to guess, at a great expense to themselves, for

our benefit? It costs an architect money to produce drawings. It is not the simple proposition of 'making a picture' which some people think. Let us choose an architect who has a reputation for doing things well and for looking after his work. Let us look at his executed work, whether it be churches or anything else; an architect who can work in accordance with the true principles of design, can design a church as well as anything else. The same heart and brain which will produce a fine city residence, or a noble school, or any other fine work of architecture, can, without a doubt, tune the soul to the consideration of things ecclesiastical and heavenly, as well as to things earthly. We who constitute a committee to spend this large sum for our congregation should investigate the subject of architect thoroughly, for upon our choice depends the success or failure of our building. If we buy an automobile we look pretty well into its make. We take care in breeding our horses. We do not marry our daughter to any man who comes along. Let us choose with care an architect, and after choosing, give him our hearty confidence and co-operation, and I am sure the best results will be obtained. Now here is Mr. X. I have seen his work, ecclesiastical and otherwise. One firm of ecclesiastical architects said in reply to my inquiry, 'Mr. X., why he is the straightest and ugliest architect in this city to-day.' Another architect told me that, 'If you choose him, you make no mistake.' Now, neither do I think we will make any mistake."

Mr. X. was chosen. A personal friend of Mr. X., his chief draughtsman, has noted a few of the principles of church design, planning and construction his principal has at various times informally set forth, and they are here given:

"Churches are built for use, not for ornament." Appearance should not be disregarded, but the designer should have always in mind the purpose for which the building is to be used. We should go to old work for inspiration, bearing in mind, however, that while our services are generally the same, the method of celebrating them is different, as also is the congregation. We find much in old work which we do not want, consequently we should not merely seek to revive the old mediaevalism, but only to select from it, to imbibe its feeling. Some writers discourse learnedly on "Symbolism" in church work and believe it to have been the main influence in the old plans. Others think that this had nothing to do with it. The services and some of the decorations were symbolical, but the churches themselves were made "practical." Sometimes poetical writers give mythical interpretations to the plans, etc., after they were made. One can call to mind the elaborate explanation of his plan, along such lines, by a competitor on the contest for the Cathedral of St. John the Divine, some years ago. Authority can, however, be quoted against such assumption. In old times the space in a plan was greater than was needed, but now we seldom have space for the requirements, and we are forced to make our plans very compact. In general, the problem is to provide for a congregation worshipping toward one point, and how they shall be placed that they may hear the preacher. It would seem under ordinary conditions it is not necessary for every person to be able to see the whole of the chancel or platform. The altar or desk, etc., as the case may be, should be the marked object, and all else lead up to it, by giving it a most dignified appearance, more than by making it visible to every one in the church. If the

whole interest centres here, it does not matter so much whether this is always visible. If this be not so, architects must look to the theatre for their plan, not to the fine old churches of mediaeval times. It should be a good room in which to listen to discourse, where every word should be heard by all. To attain this it is not necessary always to make an undivided hall, except up to a fair size. When it is required to roof over a space of 60 feet or more, if a chancel is used, one of this width would be out of scale and proportion, and produce a chancel of great cost and inconvenient proportions. It is often, therefore, found advisable to divide up this space, with a central nave and side aisles with dividing arches, which should not be too massive, nor interfere with the unity of the whole audience room. Then the chancel, naturally in the centre of the nave, takes its proper size and proportion. In recent years the width of aisles has been more and more reduced, often becoming a mere passage next the wall, but even this helps wonderfully in spans of 60 feet or thereabouts, as it, for one thing, permits the side walls being higher inside, doing away with that "squatty" look, the dread of all Church Committees, and helps to insure, with the open timber trusses, good acoustic properties. The common sense principle, that the church interior and exterior should be designed at the same time, seems often to have been forgotten these days.

The interior and exterior should be perfectly correlated. It is a mistaken idea, when one considers the spirit of Gothic art to consist of irregularity and quaintness. A church as well as any other monumental building should have a symmetrical plan and form, if the size and shape of the lot permits. The irregularity of plan, etc., of the old churches is the result of necessity or accident, or of later additions, and is perhaps more noticeable of the Elizabethan than of the earlier work. It has been said



ROCHESTER CATHEDRAL.

that "The pointed style is indeed a style of liberty, but not of lawlessness. Laws, though self-imposed, are essential to nobility in art. Without them, freedom becomes licentiousness, refinement becomes mere prettiness, and originality descends to eccentricity and vulgarity. The first architectural law is to do the right thing in the right way in the right place, not because it is 'Gothic' or correct, but because it is right."

If one can so design a church that those who can read architecture will feel that the exterior and the interior and all their parts are organically connected, it is half the problem. The rest will be provided by artistic in-

stinct. If a church is to have a tower see to it that it is located in such a position that it will count best with the mass, and so as not to interfere with the unity of the whole. In short, be so grouped that the whole will look the most dignified from the greatest number of views. When there is a shortness of funds, rather than have a poor, thin tower, have none at all. A church can be complete without it. If a tower at all, it should be a "*tour de force*." The money spent on a poor tower is wasted, and could be spent to a better advantage in other places. If a tower, therefore, let it be a good fat one and imposing.

A congregation does not enter in a crowd, but leaves in a crowd. Therefore, while ample means of egress are necessary, fewer doors will serve for entrance. It would seem, then, that it would be well in a warmed and ventilated church to prevent any unnecessary cold air entering, by keeping as many doors as possible closed, opening all for egress. The door used for entrance, therefore, should have a porch protecting it. With a tower at the corner or at the front, and the principal doors here, the tower serves as an open porch. Doors from this into a vestibule at the west end of the church, running its whole width, covered over inside by the floor of the western end gallery, forms a common and convenient arrangement. The openings from this vestibule, or "*narthex*," as our learned contemporaries might call it, into the church, would be at the end of the pew aisles, and the



BEVERLY MINSTER.

vertical walls above the backs of the last pews, made into a simple cusped tracery, panels filled with plain, clear leaded glass, makes a fine, spacious vestibule, out of which can ascend the stairs to the gallery, and in which the departing congregation can adjust their wraps and have a parting word. Thus the people would be protected from cold draughts.

The whole interior may be spoiled by badly placed windows. There should be sufficient to evenly diffuse light where it is needed. It is not needed up under the roof. In these latitudes the number of pleasant, sunshiny days is few compared with the dull ones. There should be light enough for the dark ones, so that there shall be fewer days in which it shall be necessary to use artificial light, which adds to the cost of maintenance. There may result from this on certain days too strong a light from certain windows. If so, this can be easily tempered by simple shades. The "*dim, religious light*" should not be so dim as to be expensive to maintain. The higher the windows are from the floor the better, both aesthetically

and practically, for the exclusion of draughts, etc. For another reason, see in Acts xx, 9-11, what happened to Eutychus, who fell into a deep sleep in a window as "*Paul was long preaching*." In city churches the light should mostly come from the clerestory windows, thereby excluding noise from passing vehicles, etc. Great care should be taken in designing the east window, if one is used. If, besides the east window, there is also light from the sides of the chancel, the results are much better. In fact, the light from the sides without the large east window is much more comfortable for the congregation, as they will not, while listening to the services, be obliged to study the usual intricate design of glass usually put here. One can never forget the sensation of pleasure, when first entering the principal doors of St. Ouen at Rouen, and beholding through the rich gloom the finely proportioned, long, slitlike windows at the east end filled with exquisite glass. It is one of the memories of European travel which lasts to the end.

The subject of pews is important. Columns, if any, should be spaced so that the pews shall arrange properly with them. They should be comfortable to sit in, but not to sleep in, convenient to kneel in, and backs not too high. The pew ends should be of simple design, but not less than two and one-half inches thick, as thin pews always lend an air of cheapness. Fantastic pew ends are in poor taste. The spacing of pews varies greatly. A well known English authority says they may vary from 34 inches to 38 inches from back to back. This is liberal, and in this country it is often 2 feet 8 inches or 2 feet 9 inches, and from 18 inches to 20 inches in width per person.

The heating and ventilation and lighting of the church are most important. Apparatus are often condemned when they are not at fault. A church cannot be left to cool six days, and then by lighting a fire Sunday morning expect it to be warm by ten o'clock. A church contains a great amount of air, and it requires time to raise it to a proper temperature with the apparatus which a church is willing to pay for. It is most important to have a competent and able man to run it, to pay more for sex-ton and less for coal. In general a simple system of indirect steam should be employed, the air warmed by passing through stacks of radiators in the basement, and admitted, if possible, through floor registers under each window, for the coldest surface is that of the glass. This can be reinforced elsewhere by the help of radiators when in not too conspicuous or inconvenient places. Stacks of radiators of the simplest form, without ornamentation of any kind, painted black, are by no means objectionable, because they are well designed for their purpose. They will warm one when everything else fails. The outlet for the foul air can be easily arranged at the face of the platform, or about the east end of the church, the convenience for this of course depending upon the character of the church. This foul air can be taken up to above the roof in a brick duct warmed by the boiler flue passing up in the same chimney, and reinforced by a heated coil. It should be provided with a damper near the top, and each outlet, at or near the church floor, should have a heated coil or radiator to accelerate the air current. In summer, when no heating boiler is needed, a small auxiliary boiler should be provided for this purpose. It is well to provide two heating boilers, both to be used only when the coldest weather requires it.

The artificial lighting of a church should never be arranged by rows of lights following the architectural

members, but should be taken advantage of to increase the architectural effect. For instance, if there is a row of trusses, the chandeliers should hang down from the roof between the trusses, then the rows of these lights will add to the apparent length of the building and help to furnish the church. A light hung from the end of, or a member of, a truss, always loses much in effectiveness, from the shortness of its support.

The fixtures should be exceedingly simple and not so elaborate as to attract the admiration of any one. There are many churches built with such an elaborate and expensive central chandelier, that the ordinary observer on entering will remark, "What a fine, expensive chandelier!" Such fittings of a church are its jewelry, and as every one knows, the jewelry worn by a well dressed person is not so conspicuous as to be remarked. The simple electric (sometimes combination) fixtures hanging by long, simple chains, cords, or tubes one sees in the modern English churches are exceedingly appropriate and fine. If electric lights are used, some method of arrangement of lights can be used so that the lights will not shine direct into people's eyes, as has been done in some cases recently in this country.

For good modern church work, study the designs at first hand of J. D. Sedding, George F. Bodley, Leonard Stokes, H. Wilson and many others one will find in the back numbers of "Building News," "Academy Architecture" and other English architectural publications.

There is such a multiplicity of detail even in such a simple proposition as a church, that, with the Building Committee composed as they often are, it is no small triumph for an architect, when he has finished his work, to have them frankly admit that "It is a beautiful church," and that they were right in not having a competition, that they have better results than if they had one. A Building Committee often "order" certain things to be done which an architect knows are not correct and will hurt the ensemble. It is his duty then to frankly tell them so, and if necessary, prove it to them. A Building Committee which is not open to conviction is not serving its master behind it, the Church, well. An architect who will not have the courage of his convictions and tactfully and with politeness tell them what is just and right and proper, and seek to have it done, is not fair to himself or to his profession, and misses one of the too few opportunities which are becoming rarer every day.

To show the humorous side of a serious calling:

An architect in a large Western city, a recognized authority on building construction throughout the country, and well known for his able and careful superintendence, tells of an occasion when he was reading the specifications of a church building to the Building Committee, he was ordered to change, wherever it occurred, his words "all shall be satisfactory to the architect," to "all shall be satisfactory to the Building Committee."

In conclusion: The desired cost should always be borne in mind by the architect. There is neither pleasure nor profit in "cutting down drawings." There is great satisfaction to the architect and Building Committee when they find that the work comes within their limit of cost. The architect can dream, but let him dream "right." It is a rude awakening when he finds his dream costs too much to materialize, and it weakens his position with business men. Let him from the start keep in mind the cost of it all; and as builders' bids often vary on careful drawings and specifications from 10 per cent to 33 1-3 per

cent, it will be seen that this is by no means easy, and this fact is a strong argument against architectural competitions. If builders who supply labor and materials vary so much, how can an architect be expected to "guess" nearer, and he is often tempted to guess as the Committee desire, to insure his success in the competition? If he will proceed on the principle that the people like to be fooled, to dazzle them with promises which cannot properly be fulfilled, and there are, apparently, people who like this method, it must necessarily, in the long run, lead to disaster. To realize one's impossible dreams, by employing inferior builders, is also disastrous in the end, sometimes long delayed though it may be, to the builder, the architect and the owners. On the other hand, establish a quality in one's work, and design in accordance therewith, so that when there is a lack of funds the result will not look cheap. A House of God, above all, should not look as if built grudgingly. A first quality limestone is better than a third quality marble, and a first quality of brick better than an inferior quality of stone. A good dressmaker or tailor can put style into the cheapest and simplest material. If one must design in an inferior material, let it be in a rich and plentiful way, and undisguised. Cut your garment according to your cloth, and treat all simply and frankly. If you cannot design in gold, diamonds and rubies, and must work in lead, copper or wood, do it in a great way, or not at all. Let Building Committees, when their ambitions are larger than their purse, and architects who are anxious to gamble, recall Bardolph's admonition:

"When we mean to build,
We first survey the plot, then draw the model:
And, when we see the figure of the house,
Then must we rate the cost of the erection:
Which if we find outweighs ability,
What do we then, but draw anew the model
In fewer offices; or, at least, desist
To build at all?"

—Second Part, King Henry IV, Act I, Scene 3.

The Hand Camera for Architects

THE hand camera, as a means of recording the progress of construction, or as a companion afield to secure notes of detail or other interesting bits, is a much neglected and a most valuable aid to the architect in his daily work. Even the busiest man may find the hand camera a valuable assistant. If, as is sometimes urged, the pictures are too small to be of value, it is well to know the possibilities of enlarging. At the 1907 exhibition of the Architectural League in this city one of the largest, if not the largest, exhibits was composed entirely of enlargements, some of these measuring five feet in length. None of these were made from negatives larger than ten by eight inches, and among the lot were four, twenty-eight inches in length, made from film, hand camera negatives only $3\frac{1}{4} \times 5\frac{1}{2}$ inches, or what is known as postal card size. An architect's office equipped with a good hand camera and a modern developing machine is prepared for photographic work of almost every description, with perhaps the exception of copying plans. The manipulation of the camera needs little, if any, skill, and the developing by daylight with a developing machine can be entrusted to the office boy, as it presents no technical difficulties. The prints may be made on blue paper, kept in albums for ready refer-

ence. The whole process does not require a dark room, nor is it untidy. If one-half the care is exercised in making small negatives with a hand camera that one feels called upon to take in making larger exposures, the results will be equally satisfactory.

A few hints as to hand camera work as applied to architectural photography may be of value.

If in a photograph the vertical lines are not parallel, it indicates the camera has not been held level. The beginner in his effort to secure the top of a building, or any object whose angle is greater than that of his lens, will tilt the camera. The result will be distortion and incorrect perspective. If the top of the plate cuts off the top of the object, the point of view must be higher, or else more distant. In the case of photographing detail, exaggerated foreground may be overcome by standing with the back to the subject to be photographed, holding the camera upside down at arm's length above the head, and, with head thrown back, view the object through the finder. Doorways, windows and the lower parts of buildings may be successfully photographed in this way.

It must be borne in mind that any camera held in the hand admits only of a rapid exposure, or a "snap-shot." This necessitates a rapid lens, or one that will work with good definition at a large aperture. If it is possible to rest the camera on some rigid support, a "time exposure" can be made with a minimum opening or "diaphragm," and the resulting negatives will be sufficiently sharp to admit of enlargement up to ten or fifteen diameters.

The writer has seen many negatives made by architects or members of their office, and has been surprised to note how completely in many instances the subject of lighting has been ignored.

With the exception of perhaps constructive detail, pictures made on a gray day are flat and uninteresting, as they lack contrast and modeling. The camera should never be pointed towards the sun, or in any direction where direct sunlight may enter the lens.

After many years' experience in photographing architectural subjects it has been found that a point of view where the shadows come towards you, thus giving variety to the various planes and projections of the building, yields best results.

In making notes with the hand camera of interiors, the problem of exposure is complicated by many different conditions.

The volume of outdoor light entering the room, the color of the walls and furnishings, all must be considered. Lest the architect who might like to try his hand at hand camera work be discouraged at the outset, it is best to state that after one or two attempts he can readily learn the approximate exposure and start on the road to good results. An under-exposed negative is hopeless, but one that is overexposed will yield much detail, but be "thin" in quality. This is easily overcome by printing in a weak light, and not in direct sunlight.

Avoid, if possible, pointing the camera at windows, but, if you must, pull down the shades and let the light enter at back of camera. For a trial exposure on a sunny day, on the average domestic interior, stop the camera to *f. 32* and give about eight minutes. If the room is furnished in deep reds, maroons or dark greens, ten or twelve minutes will be better. If there are no furnishings, if the room is bare, with white walls, four or five minutes, or even less, will be sufficient. Don't be afraid of a little over-exposure. The developing machine will take care of that.

ILLUSTRATIONS

BAPTIST CHURCH IN BROOKLINE, MASS. J. A. SCHWEINFURTH, ARCHITECT.

This building, at the corner of Park and Beacon Streets, costing about \$100,000, is built of Brighton stone and trimmed with Indiana limestone. The auditorium will seat about 800 people. Beacon Street at this point is rapidly taking on the character of a city street, and this church has been designed, as near as the funds will permit, to be a city church, with more refinement of design and detail than would be necessary for a more suburban location. This church has certain features in its design that will show at once that it is a Baptist church rather than an Episcopal church or a church of other denomination.

There are two entrances in the main tower, and one in the small tower from Webster Street, leading into a vestibule under the gallery of the church, enclosed in a simple carved wood and leaded glass screen.

In the auditorium, side aisles are marked by a series of massive columns supporting a series of vaults. At the end of each vault the walls of the church are large traceried leaded glass windows. Over the gallery at the front of the church is one large ornamental traceried window, which gives a great opportunity for a large memorial window.

The preacher's platform is at the end of the church, and from this opens the baptistry, a feature of the church. It is at the back of the platform, surrounded by carved tracery, and will always be in plain sight of the congregation. The audience can thus see the progress of the baptismal rites without leaving their pews. There will have to be no taking up of floors in sections or rearrangement at any time in any part of the church in order to prepare for baptism.

The baptistry is semicircular in plan, simply decorated in mar-

ble and gold, and will be lighted by invisible electric lights; running about the back of this semicircular baptistry is a marble shelf to hold plants. The green leaves against the gold background will make a pleasant decoration at all times.

Back of the baptistry is a series of small robing rooms with tiled floor, arranged to drain properly, and from passage at end of these there leads an incline or "beach" down into the baptistry.

Immediately over the baptistry is the choir gallery, seating twenty-five or thirty singers, and back of this is the organ chamber. The choir gallery is back of a massive arch, with a vaulted top, and back of the choir gallery is another massive arch enclosing the organ screen. This organ screen is in the shape of a large, unglazed traceried window, with the gilded organ pipes showing behind the screen. This large, traceried organ screen at one end of the church, with a similar large, traceried window symmetrically disposed over the gallery at the opposite end being distinctive features in the church.

The roof of the auditorium is an open timber trussed roof with massive trusses, with carved angels at each end of the hammer beams, in the English Gothic style.

Immediately back of the auditorium is the Sunday school department. This is entered from Park street on the side and also from Webster street, and has two entrances from the church auditorium. The basement contains coat and toilet rooms for men and women, a large social hall, serving room, storeroom and kitchen, janitor's room, and under the rear part of the main church is the heating and ventilating apparatus.

The first floor of the Sunday school wing contains two large classrooms at the end toward Park street, and a large church parlor with a fireplace at the rear end, all opening by the means

of sliding and folding doors into a large Sunday school auditorium, about 40 feet by 50 feet, running up the full height of the building to an open-finished roof. This auditorium is lighted by means of long, leaded glass windows at the sides. Near the church auditorium is located the advisory committee's room and the minister's room, with toilet, coat closet, etc.

The second floor of the Sunday school wing contains a gallery running about three sides, and opening into the gallery at front and rear by means of large sliding and folding doors are classrooms. This gallery is wide enough to contain seats, so that the occupants of the classrooms can, when desired, sit in the gallery, where they can both see and hear the proceedings on the floor of the Sunday school auditorium below.

Over the minister's study there is a large choir room communicating with the stair hall and with choir gallery. There are ample toilet and coat room accommodations throughout the edifice.

BAPTIST CHURCH AT AMHERST, MASS. PERSPECTIVE VIEW, SHOWING ALTERATIONS BY MR. ELLERTT LYNCH, ARCHITECT.

INTERIOR VIEW, MADISON AVENUE, NEW YORK, PRESBYTERIAN CHURCH. MESSRS. JAMES E. WARE & SONS, ARCHITECTS.

ST. LUKE'S (EPISCOPAL) CHURCH, AMHERST, MASS. MR. FRANK A. BOURNE, ARCHITECT.

St. Luke's Church is an example in which concrete is the building material throughout. With the exception of the foundation walls below the ground, which were of rough local stone, the woodwork of the doors, roof and temporary walls and furniture, and the leaded glass, concrete in different forms is used throughout. The floor is a heavy layer of concrete directly on the carefully drained surface of the ground. The hot-air heating apparatus is in a tunnel $3\frac{1}{2}$ feet wide under the centre aisle, enlarged at the heaters and connected at two points to the outside for fresh air supply. The floors of these spaces are cemented, the walls are monolithic concrete, 8 inches thick, cast in place in wooden forms, since removed. The ceiling, $6\frac{1}{2}$ feet above the floor, is concrete reinforced with expanded metal throughout, forming part of the floor of the church. A few steel beams were used in the floor over the open space, where the span was greatest.

The regular size of the stone used in the walls is $32 \times 12 \times 12$ inches, with two four-inch hollow spaces in the interior. The corner blocks are L-shaped, 16 inches across the ends, adding greatly to the apparent and real strength of the walls.

The large blocks cost less to lay than limestone. There was less danger of staining, as ordinary cement mortar could be used if the surface of the block was wiped off while mortar was wet. The large blocks cost slightly less to make than the usual $8 \times 16 \times 12$ -inch, but slightly more to lay, as a hand hoist was necessary with a horizontal track over the wall. The effect of the large blocks is much better.

The dimensions of St. Luke's Church are as follows: Chancel, 24×34 , 816 square feet; nave, 25×61 ; walls, approximately 299 square feet, 1,525 square feet, 2,640 square feet, 34 feet high (89,760 cubic feet); north aisle, 16×46 , 736; sacristy and choir room, 16×31 , 496; walls, 299 square feet, 1,531 square feet, 18 feet high, 27,758 cubic feet; outside dimensions, 43×97 , 4,171 square feet, 117,518 cubic feet. Floor, 250 seats; gallery, 75 seats; total, 325 seats; 4,171 square feet at \$3.35 per square foot, \$14,000, cost of work; 2,640 square feet, at \$4.25 per square foot, \$11,220, cost of concrete part; 1,531 square feet, at \$1.80 per square foot, \$2,780, cost of wood part; 117,518 cubic feet at 12 cents per cubic foot, \$14,000; 325 seats, at \$43, \$14,000; 325 seats at 13 square feet per seat, 4,171 square feet, total area; 325 seats at 11 square feet per seat, 3,573 square feet, area inside walls; 250 square feet at 9 square feet per seat, 2,301 square feet, area nave and north aisle. This shows liberal allowance for aisles as well as for chancel, as ordinary audience rooms allow 7 square feet per seat.

The saving of expense resulted from the slightly lower cost of the machine-made blocks below the cost of brick and of the moulded work and tracery, cast in plaster moulds, somewhat less than cut stone for single pieces, and much less where the moulds could be used over and over. A great saving was also made in the fact that the back of the block, with care in handling, was sufficiently good in texture and more than satisfactory in its slightly varying tones, for the interior of the church, conse-

quently a plasterer did not enter the building. The answers to the questions in the application for a permit for a building so immune to fire as this must have been amusing: No furring, consequently no fire-stopping. Not a lath was used.

EAST END BAPTIST CHURCH, CLEVELAND, O. HUBBELL & BENES.

The East End Baptist Church is an extension of the original brick church, which was built several years ago and which is now used as Sunday school until such time as it will be possible for the congregation to erect a Sunday school of adequate proportions.

The exterior of the church is of red pressed brick and white terra cotta with a black slate roof, the principal feature being the colonial tower on the front.

In the basement is the heating plant, kitchen and a large room used for lectures and social gatherings.

On the first floor is an auditorium with balcony and gallery above, having a total seating capacity of six hundred.

The unique feature of the interior is the arrangement of what might be called the "working part" of the church. The platform contains the minister's pulpit, back of which are the seats for the minister and his assistants, back of these the organ console, back of this the choir, while above and back of the choir is the baptistry, which is arranged in such a manner that the minister and candidates can enter and leave without being seen, while during the ceremony of baptism they are in full view of the audience.

THE ITALIAN CHURCH OF THE MOTHER OF SORROW, RUTLAND, VT. MR. ARTHUR N. SMITH, ARCHITECT.

The church is being erected on an elevated plateau on the outskirts of the City of Rutland, Vt., the site commanding a fine view of the surrounding mountains.

The grade course and steps will be of local tooled marble, all other trimmings of "Roman stone," a grey buff cast concrete made by a patent process, walls of local, red, selected common brick, laid in Flemish bond with coarse white joints, the roof covered with Spanish pattern green glazed tiles, and the tile will also be used to cap off the upper surfaces of gable buttresses.

Figure work will be executed in marble.

The scheme of the interior divides the nave into six bays longitudinally marked by the trusses; the span of the nave is divided into four parts, the width of two parts nearest the centre being let up into the roof with a plain barrel vault, while the one part on each side is treated with a flat ceiling, the wooden tie and king post of the trusses showing in the vaulted part of ceiling and the tie as ribs on the flat part at sides.

The entire interior, walls and ceiling will be plastered to give effect to a scheme of color decoration.

For the present the windows will be filled with "cathedral" glass in one tint of green, later it is the intention to use a painted glass of appropriate subject and color in connection with the decorative plan.

It is hoped to have the chancel finished on floor and the sides to proper height and the altar in colored local marbles.

The basement will be used mainly for school and assembly purposes.

Building will be heated by steam and lighted by electricity and gas.

ST. JOHN'S CHURCH, BEVERLY FARMS, MASS. MR. HENRY VAUGHN, ARCHITECT.

St. John's Church, Beverly Farms, was built in 1902 at a cost of \$17,000. It is a one-aisle church with a seating capacity of 230. The tower and the walls up to the under side of the aisle window sills are of seam-faced granite, with cut granite quoins. Above this the walls are of what is technically called half-timber work. The nave piers, arcading, and all interior finish is of cypress. The chancel roof is boarded on the under side of rafters, straps and collar beams.

Additional Illustrations in the International Edition.

PULPIT: THE CATHEDRAL CHURCH OF ST. STEPHEN, VIENNA, AUSTRIA.
PULPIT: STRASBOURG CATHEDRAL, ALSACE-LORRAINE.

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FEBRUARY 26, 1908.

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The Program of Competition Issued by the New York State Commission on New Prisons.	

THERE will be we believe a general feeling among architects that the Commission on New Prisons in issuing the program of competition for the proposed new Sing Sing prison plant has not acquitted itself with great credit, and that the state architect is placed in an embarrassing position by having his recommendations with reference to the conditions of the program ignored while he is called upon by law to act as a member of the Board of Award, and one that if misunderstood by the profession and public might injure him immeasurably. is readily apparent. As a consequence of its failure to be guided by these recommendations of the state official whose office and acknowledged familiarity with the subject should have made his services eagerly sought, the Commission has put forth a program which can scarcely be considered otherwise than unfortunate and ill-advised in many of its provisions. The requirement calling for sixteen sheets of drawings 30 inches by 50 inches, each containing an average of six individual drawings, appears excessive, unreasonable and useless. An enormous amount of work is entailed and when it is considered that more than one-half of the drawings must be made to one-eighth inch scale, a condition in itself severe, and all are to be executed in India ink, it will be realized that in this particular the conditions are probably without parallel. And why an architect capable of presenting a suitable general scheme or plan and acceptable designs for the principal buildings should be required to demonstrate his ability to design lumber sheds, wagon houses, blacksmith shops and such minor structures is quite incomprehensible. Not only is this vast amount of work unnecessary and valueless in making an award, but the condition will undoubtedly operate to deter many able architects from entering the competition.

ANOTHER condition the wisdom of which might be questioned is that of time allowed. As the drawings must be delivered to the Commission in Albany on April fifteenth, and but few of the prospective competitors received the program of competition before February fifteenth, barely sixty days were allowed to accomplish the immense amount of study and work demanded. That only those offices in which there is little work demanding immediate attention can hope to comply with this requirement seems quite probable; which, of course, is in effect equivalent to limiting the competition to this class. Considering the time that has elapsed while the preliminaries have been in process of adjustment, the necessity for such great haste in the preparation of competitive plans is not apparent.

THE small amount of definite information given and the large amount of detail requested in connection with these competitive drawings is more remarkable than praiseworthy. One might almost be led to believe that competition sketches had become confounded in the minds of the Commissioners with working plans and specifications. The program reads:

"In this competition it will be necessary for architects to set forth very fully the materials to be used both outside and inside, and to present floor plans covering all rooms, even toilet rooms, clothes closets, store rooms and the like. . . . The grade and quality of the material and the finish of the different buildings must be clearly stated and an estimate of cost submitted. Such estimate should be accurate and the accuracy of estimates will be considered in making the award; and if the same, by comparison or examination, prove to be improper or insufficient, the award may be withheld. In other words, the competitors are required to furnish a just and proper estimate of full cost, such estimate to be on the basis of civilian labor less ten per cent. for prison labor. This deduction to be on labor only, and not on cost of material."

While it would probably be entirely possible for an architect to present plans setting forth the great amount of detail requested, and also to prepare a specification covering fully the materials to be used, his being required to do so simply places a large amount of additional work upon him which is of no value whatever in the intelligent selection of a scheme and architect for the project in hand. There can be no reasonable doubt that these minor matters of plan and the choice of many materials will be modified, revised and redetermined after the architect has been selected and has had an opportunity of studying conditions, such as are not afforded and cannot be to all competitors, and to give weight to provisions of this kind is simply to decide the competition on non-essentials.

THE same observation might be made concerning the matter of an estimate upon which so much emphasis is laid in the program. It is not essential. To the practicing architect who realizes that estimates submitted by builders, based on carefully drawn and detailed working plans, supplemented by complete and definite specifications, for usual and familiar work presenting no element of risk, vary from five to fifty per cent., it would seem that being required to furnish "a just and proper estimate of full cost" based on sketch plans of work bound to be more or less unfamiliar, is about as difficult, but at the same time as reasonable and as useful as to require each competitor to submit an accurate estimate of the population of the state fifty years hence. The Commissioners could decide which was the "just and proper estimate" in one instance as well as the other. They would have the same opportunities for "comparison or examination" in both cases.

THE AMERICAN ARCHITECT

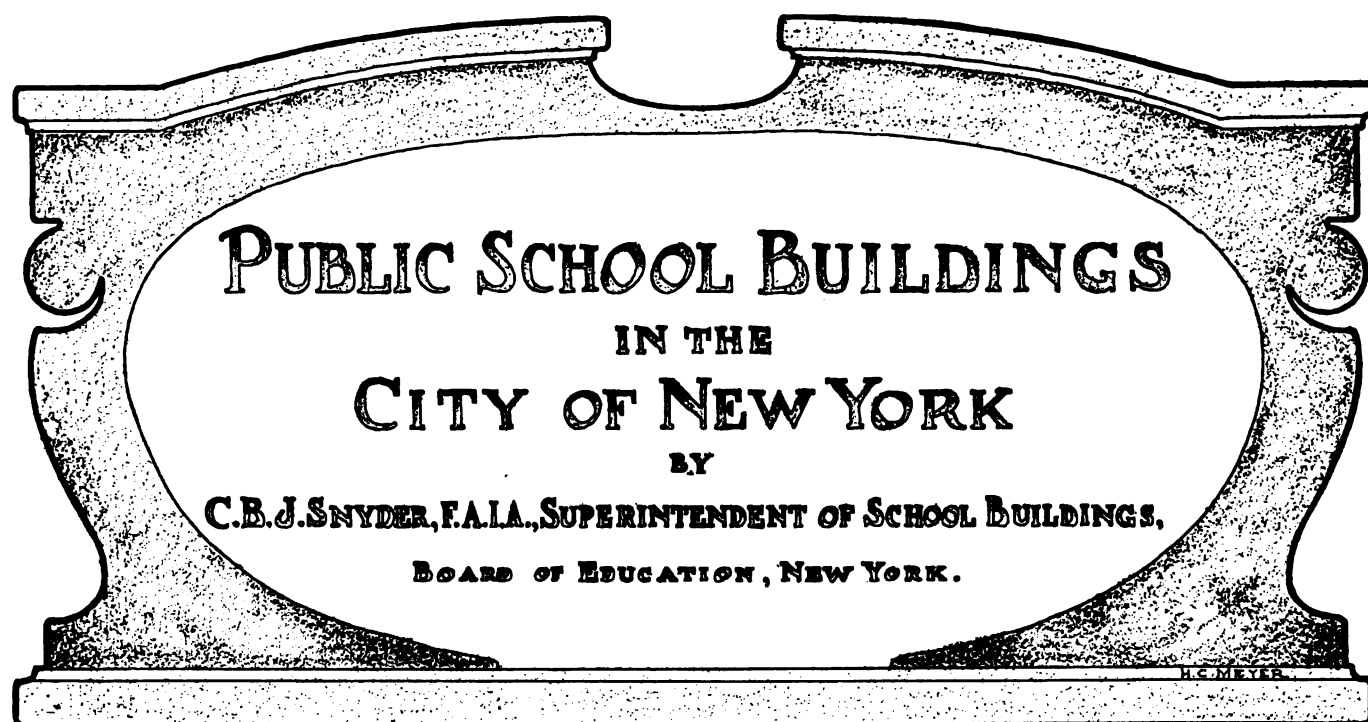
AND

BUILDING NEWS

Vol. XCIII.

WEDNESDAY, MARCH 4, 1908.

No. 1680.



PART III

THE school buildings illustrated in the preceding numbers (Jan. 25 and 29, 1908, Vol. XCIII), were nearly all from what is now known as the Borough of Manhattan, but which prior to 1875 constituted The City of New York.

It is there that the congestion of population is greatest and land values consequently highest.

There are also points of great congestion, however, in the Boroughs of The Bronx and Brooklyn, where the school buildings must follow the lines already indicated as having been found necessary to meet the same problem in the Borough of Manhattan. As a rule, however, the schools in these two boroughs, as well as those in Queens and Richmond, have quite large spaces for playgrounds, some plots of 200x200 feet having now only an eight-room building thereon, which later, however, will have to be replaced with larger structures to keep up with the steady growth of population.

Plate 28.—Public School 37, The Bronx, is of the H type, but with the more recent improvement in the planning whereby the assembly room, seating about 1,400, is placed beneath the outdoor playground of the larger court (see Plates 29 and 30). This has the advantage of obtaining a room free from obstructions and larger than

could possibly be formed in the body of the building, while it is easily accessible for the general public. Illumination is obtained by the use of vault lights placed in the pavement overhead and also from windows along the street. Mechanical ventilation and electrical lighting are also provided so that the room may be used under any and all conditions.

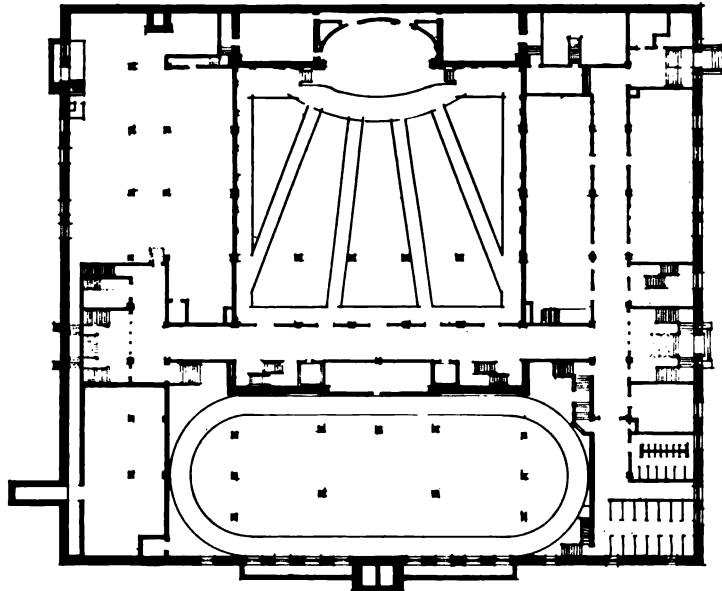
The principal disadvantages are the low ceiling—necessary in this particular case because of the presence of water at a high level—and that the children have more stair climbing than usual. This last is overcome almost wholly by so arranging for its use that the pupils enter direct for the exercises before going to their classrooms or just prior to dismissal.

In large schools these assembly rooms have been found so convenient that they are used almost constantly for one purpose or another.

A further development of this scheme has been put into effect in Public School 65, in the Borough of Manhattan, where another and smaller assembly room is formed beneath the small courtyard.

This was made necessary as the 3,200 pupils which the school accommodates are divided into two separate school organizations.

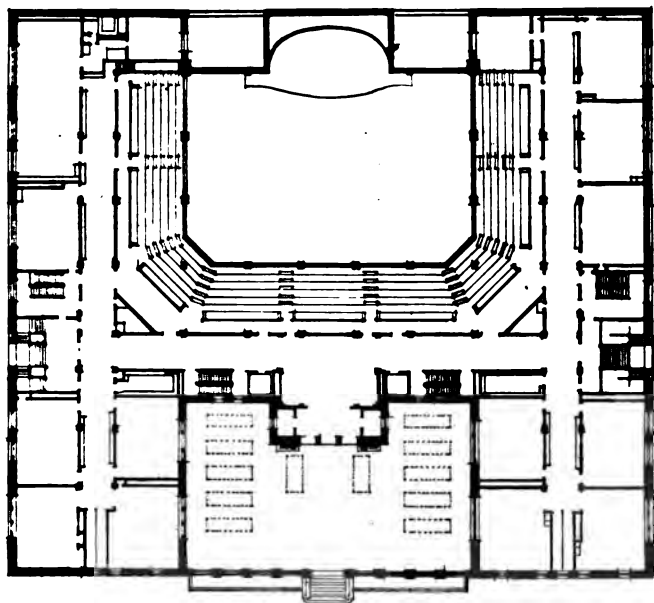
We have thus a plot of 150 feet frontage by 200 feet in depth to the next street for which a structure has been designed and erected covering the entire area of 30,000



- BASEMENT PLAN -
- Commercial High School - Brooklyn -
FIG. 1.

square feet, in the basement of which over half is used for school purposes, while the stories above are so planned as to have courtyards covering about 13,000 square feet for outdoor playground, having an abundance of light and air, which cannot be infringed upon by neighboring buildings.

This also applies to the classrooms which, excepting those in the ends fronting the street of 50 feet in width, all face the courtyard, thus giving much additional light.



- FIRST FLOOR PLAN -
- Commercial High School - Brooklyn -
FIG. 2.

Plate 31.—Public School 147, Brooklyn, occupies a block front of slightly more than the usual dimensions and somewhat irregular in form.

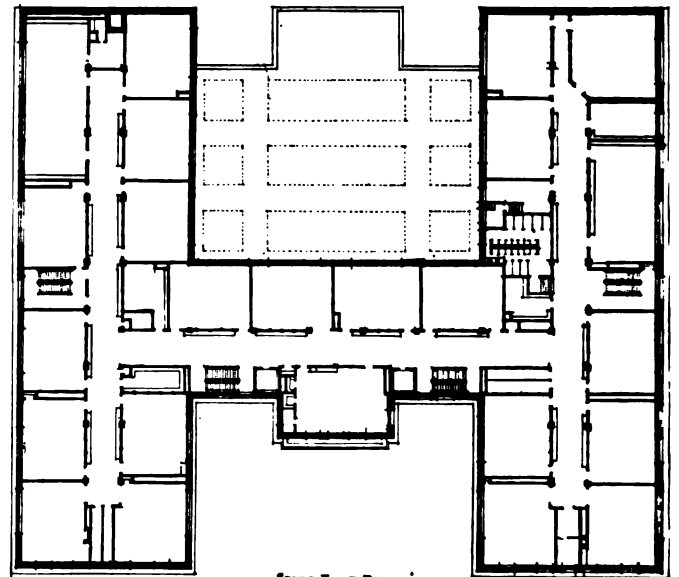
The assembly room is placed beneath the large court on the rear:

Plate 33.—Public School 137, Brooklyn. This is one of several of this type erected about the same time, wherein the toilets and stairways are placed at each end of the building, while the assembly room is formed on the upper floor in the central portion. This is not to be recommended because of the many obvious objections thereto and has been abandoned in all later work.

Plate 35.—Public School 153, The Bronx. Erected in a strictly suburban locality at the foot of a sharp slope, the intent having been to bring all down to the curb level. This was obviated by the adoption of the scheme shown, which left some of the original natural features.

The shrubbery was presented to the school by interested parents and planted at one time without notice to the authorities, who otherwise could have directed the work so as to obtain better landscape effects.

The structure is fireproof throughout and cost about 25 cents per cubic foot, the local conditions as to rock



- SECOND FLOOR PLAN -
- Commercial High School - Brooklyn -
FIG. 3.

excavations, restrictions and other matters having largely to do with its price.

Plate 37.—Public School 34, Richmond. This is another instance where suburban conditions have been met by designing a low building, suited to its location.

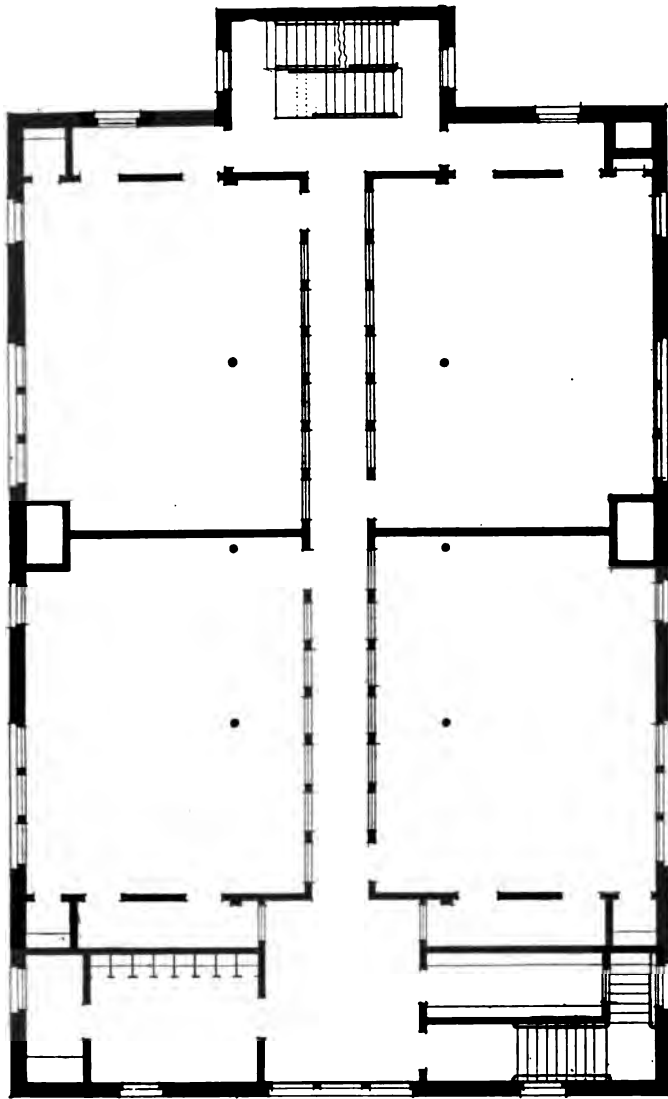
As in all similar cases the cost per capita, owing to local conditions, long haulage, great distance from the homes of the workmen, absence of supplies, is greatly in excess of work in the heart of the city.

It might well be added that the expense is increased by the cost of the stoops and approaches, all of which would answer for a much larger school building, in the computation of which the cost would be inconspicuous, but in the smaller building of eight classrooms becomes of real importance.

Plate 39.—The Commercial High School, Brooklyn. This is another instance where the requirements called for a school, the basement of which covers the entire plot of 200x200 feet.

The gymnasium is beneath the front courtyard (see Plate 11) and the assembly room, seating some 1,500, in the rear and lighted from above.

Figs. 1, 2 and 3 clearly show the arrangement of the principal floors.



~SECOND-FLOOR PLAN~
~Public School 34 Richmond~

FIG. 4.
(To be continued.)

The New Color Photography

Previous to the invention by Mr. Pierre Lumiere of his color plate, photography in colors was more of a scientific amusement than of practical value. The necessity for a screen and varying baths and much manipulation has been entirely avoided by Mr. Lumiere. The transparencies produced by this new process show all the varying colors with accuracy and harmony, and with all of the intermediate tones, the lack of which has marred the results of processes heretofore extolled as "true color photography."

With this new plate the veriest amateur may attain satisfactory results. This result, however, is not a photograph in its generally accepted sense, but to be seen it must be held up to white light and viewed as a transparency. But one picture can be obtained from each plate. So far no method of printing or duplicating these plates on paper has been devised.

Skyscraper Details

WHEN a student at Harvard, a good many years ago, the writer used now and then to waste a few moments in the courtroom of the old commons hall in considering the variegated headgear hanging there, easily identifying each item in the assortment with its appropriate owner, so redolent of its owner's individuality was each nameless covering, slouch, or straw, or Derby. Identification used to be made in the same way with habitual ease by the old Virginia darkey who for years kept the dining-room door of the Ebbitt House at Washington: never did he by chance happen to hand the wrong hat to the veriest of casual customers, though he had but a passing glance to associate headgear and owner together.

Pass with your wife down a crowded sidewalk and later you will find her able to give her chosen gossip an account of how each woman she had passed was dressed, but you will note that her description will invariably begin with the hat and then proceed downward to the other articles of attire. If you have been, for your part, noting the men, you will find that you have remembered only their faces and, possibly, their cravats. Go to a picture-gallery, halting at the entrance to take a general view of the effect, and you will note that your eye does not at once and naturally seek "the line," but passes first along the "skied" and then drops *naturally* to those lower down.

Take a page of matter printed in a fair sized type, carefully and accurately obliterate the lower half of each line of type and you will find that the page can be read with almost as much ease as before partial obliteration had taken place. Next, reverse the experiment and on another page obliterate the upper half of each line and you will find it requires long and patient study before you can reconstruct the page.

Other proof will readily occur to every one of the fact that if it is not a natural it is at least an acquired habit to identify things—almost all things—by their tops. Even Boots at the inn, with all his specialized observation, has to rely on his chalk-marks to enable him to restore foot-gear to their rightful wearers, whereas hats do not really require to be checked. The top of a thing, then, is its significant feature, its hall-mark of individuality, its identifying symbol, and this is as true of buildings as of other things, animate or inanimate. The Great Pyramid? You are not sure whether it has three sides or four; but you are certain that it has an apex. The Parthenon? You don't remember whether it has or has not columns on the flanks, but you recall distinctly that it has pediments. Notre Dame? You think it possibly may have more than one western portal, but you are positive that the western towers are not spire-capped, and so it goes.

From this natural or acquired habit of reading from the top downward has naturally grown the almost universal habit of designing from the top downward. A draughtsman or artist rarely draws with an up stroke, save when putting in foliage or shading, and in designing, say, a chimney-piece he conceives and blocks in the mantel-shelf and top-hamper before he turns to providing a means of supporting it from the floor; and in "feeling around" while trying to evoke a satisfying design for a building, be it church, cottage or public building, he will in nine cases out of ten begin with seeking for a good

arrangement of roof-lines before he thinks of attacking the matter of proportion, mass, distribution, balance and all the other considerations that are involved in the study of an architectural design. In fact, the cultivated veneration of the "sky-line"—which is the very shibboleth of lay writers and callow architects—is merely an expressed acknowledgment of the feeling held by every one that a building deserves an identity, and established habit and correlative usage have proved the convenience of having the identifying characteristics at the top. It is this necessity of satisfying a common demand that justifies the apparent absurdity of concentrating elaborate architectural treatment upon the upper rather than upon the lower stories of buildings, even in the case of skyscrapers.

The angle of vision of the human eye is so great that while buildings were of not more than eight or ten stories' height it was possible for the observer to take in their entire treatment from a point of view so short a distance away that the character, form and relative value in the scheme of the decorative detail of the building could be understood and enjoyed as well as the mere masses and proportions of the building itself; their designers, that is, suffered under no disadvantages that had not already been studied, understood and sufficiently overcome by their predecessors, from the cathedral-builders downward.

But with the advent of the modern lofty office building the designer was confronted with a really new problem in design, the problem of discovering the scale at which the decorative details of the building must be designed if it actually was to discharge its functions acceptably. The problem has been worked out now many times and in various ways by different designers, but never with entire success; and this is not surprising, for the problem is almost unsolvable, and for the simple reason that no one can determine what is the real viewpoint for one of these skyscrapers. Was it designed for the pleasuring of the man passing in the street it fronts upon, or for him who sees it a few blocks away from his seat in an elevated railway car, or for him voyaging in a ferry-boat? The first can only see it enormously foreshortened, the second has but a fleeting glimpse of a section here and there seen down a side street, while the third can but see its upper part in mass and as a silhouette to which the decorative detail lends no value whatsoever. For the man in the street, the detail, high up and seen only under sharp foreshortening, must be not only enlarged beyond ordinary dimensions, but also grotesquely distorted, so that it may have an approximately familiar air when seen from below, while for the benefit of those who see it from afar still greater exaggeration in size and distortion in another direction is required. And who can say where the *juste milieu* lies?

The problem is further complicated by inability to determine whether the design should be intended for the pleasuring of the many who pass by or for that of the few who have to live with it always—just across the way in an equally lofty building. The fate of these unfortunates is really pitiable, for they have to stare out daily from their own lofty lookouts upon ungainly and sprawling decorative forms that the designer never conceived would ever be seen from such viewpoints. Think of the joy of gazing daily at a great terra-cotta festoon of cabbage roses, each of whose petals has the size and grace of the pad of a *Victoria regia*, or counting a row of

dentils each as big as a dog-kennel, or studying the graces of an alleged human figure thrown into positions that even the Inquisitors' rack could not have accomplished! Surely the sensibilities of the occupants of neighboring high buildings deserve to be kept in mind by those who design these skyscrapers and have to work out an acceptable scale for their decorative detail.

Perhaps the treatment that has given most satisfaction occurs in those buildings where between the highly ornate upper stories and the less elaborate lower stories there is interposed a main body, or shaft, of plain walling practically wholly devoid of decorative treatment. In these cases any lack of accurate sequence in and proper gradation from the coarse exuberance of the detail in the upper stories and the smaller-scaled and more refined detail of the lower stories is unnoted, for the imagination readily perceives that, had it been thought desirable, the architect could have designed detail precisely suited to each successive height level and connecting satisfactorily the scale used aloft with that used below. This plain middle body has a value in that it gives the beholder's imagination a field over which it can play and, in a manner, lends to the entire building something of the character and quality of a sketch which is almost always more satisfying than a minutely finished picture.

The cathedral-builders—almost the only ones who were vexed by the same sort of difficulty—had a much simpler problem than has the designer of a skyscraper. His cathedral, though, for the day, comparatively large, was actually quite modest in point of altitude—most of the English cathedrals fall within the hundred-foot level, while another hundred feet includes all but the loftiest spires—and so could easily be taken in at a glance from so near a point that the detail still counted. They could, without offense to neighbors looking out from windows at equally lofty levels, increase the size, shape and pitch of their crochets, say, to give just the right effect when seen from the ground, for the cathedral was designed to be seen from the ground and from the ground only, while no one can say from what point the skyscraper was intended to be seen, the designer himself the least of all, perhaps.

It is defensible to argue that because these buildings are huge their decorative detail must be worked out on a Gargantuan scale. But St. Peter's is a standing warning to the designer who loses sight of the value of the human scale, and in these high buildings the human element insists on being recognized. Not only the mind knows that these buildings house thousands of men and women daily, but the eye perceives that the human scale has been partly recognized and adopted at every level, for the office window, of uniform size from top to bottom, is a human unit of measure that can't escape recognition.

The problem is a difficult one and the writer does not pretend to have found a solution that satisfies even himself. Perhaps the new tower of the Metropolitan Insurance Building in Madison Square, New York, may throw interesting light, for not only is it to be the highest structure in the city, but it is to be an adjunct of a building in which the human scale has very successfully been preserved. But in another way the lesson may be misleading, for, owing to its exceptionally favorable position at one side of a considerable open space, it can actually be seen in its entirety, as most skyscrapers cannot.

Report of Committee on Registration of Architects

WILLIAM B. ITTNER, CHAIRMAN.

"THE examination and registration of architects in this country, or as it is sometimes called the licensing of architects, is already an accepted fact in three states. In one of them, Illinois, the license law has been in force more than ten years, and in New Jersey and California a shorter period. The laws are also being enforced in these states. In Illinois where there are 700 licensed architects only one person is known to be openly violating the law, and that person has been convicted on three prosecutions. The Illinois law has been tested in the courts only on the question raised as to the discretionary power of the State Board in rejecting applicants for license. The Board was sustained by the Appellate Court of that State and the case was not carried by the appellants to the Supreme Court. In California the whole question of the constitutionality of such a law has within the present year been revised by its Supreme Court, and the decision which has recently been published shows that the law is sustained on constitutional grounds on all points in dispute.

"It is only necessary here to quote from this lengthy and exhaustive decision a paragraph in two lines which ought to put at rest all vague opinions of laymen, that such laws are necessarily unconstitutional. It is as follows:

"In our opinion the act in question is not open to the claims of petitioners against its unconstitutionality.' Several cases have been tried in New Jersey under the provisions of the existing registration law and decisions rendered but in no case has the constitutionality of the law been questioned.

"Your committee feel that the American Institute of Architects should confine itself in taking up the consideration of the subject of the registration of architects to an investigation of the operation of the laws already enacted in the states where such laws exist. The result of such investigation might be of value to persons in other states who desire the enactment of such legislation.

"Your committee is of the opinion that such laws should not necessarily be advocated only by architects. They are of the nature of Police enactments similar to those requiring the licensing of physicians, lawyers, pharmacists and dentists. Most of the states have license laws covering all of these professions. The licensing of lawyers is by the Supreme Court or the highest courts of the states, who issue licenses to lawyers after examination. The lawyers thus becoming adjuncts to the courts. In all other cases the parties are licensed under the constitutional limitations for police laws, made for the protection of the community against the acts of incompetent or dishonest persons. Architects come within this category, as is very well understood. Such laws are not enacted by the Congress of the United States under the provisions of the Constitution, they come under the powers delegated to the several states and each state is the judge of the necessity for them within its own boundaries.

"In England it is different because all laws are passed by the Parliament of the United Kingdom, while Great Britain's colonies have the same powers that are exercised by the States of our Union. Already the Province

of Quebec of Canada has a license law, which is enforced by an incorporated association of architects, and the proposition now before the British Parliament is to place the power for licensing architects within the Royal Institute of British Architects for Great Britain and Ireland only. On the continent of Europe there is something similar to a licensing system in France and Germany; but in these countries only certain architects are given an official status by reason of special appointments. There, however, everything in the nature of licensing has a tendency to create an aristocracy of architecture which would not be possible in this country under any circumstances.

"The investigation by the New York Chapter which was of the nature of a referendum addressed to architects in states where there now are license laws developed a considerable amount of correspondence, which has been placed at the service of the Chairman of this committee, and from which extensive copies have been made in his report submitted to this committee. The opinions expressed are so various that we cannot see that they can be used as a foundation for a report as in favor of or opposed to the enactment of licensing laws for architects. It must be evident to all of our members that when such inquiries are made the small proportion of answers received from those who are addressed are more apt to come from those who dissent from or have some objection to particular features in the license laws, rather than from those who have investigated them and are ready to express their complete approbation.

"While nothing is heard from the large class of practitioners who would approve of the ultimate workings of such laws were they enacted, but who are too indifferent to take any positive step pro or con for their enactment. On such occasions persons who have felt that provisions of the law have come in conflict with their own opinions or practice in certain particulars naturally have them in mind when furnishing such information and offering such replies. It is too late now when such laws have been in effect for ten years, and whose operations are open for investigation to seek for individual opinions, as if nothing of the kind had ever been contemplated. The result as a whole could not be a fair expression of opinion.

"An architect's license law must necessarily be enacted under the police powers given to the legislatures of the several states by their constitutions, to regulate the acts of incompetent persons or even prevent incompetent persons from performing acts which might result in danger to the community. It is very clear that such laws should be enacted rather on the demand of those who need such protection than of those who are to be regulated by it. And this brings us immediately to a consideration of the general misunderstanding among architects in places where such laws have not been enacted, as to their true meaning and purpose. No law which regulates the practice of architecture in the interests of architects should be or ever will be enacted. It is the people only who should be interested in their enactment. Architects are only affected by the enforcement of such laws, and the architectural profession will never feel the full

force of the benefit conferred upon it by these laws until a number of years after their enactment.

"It would perhaps be fair to say twenty years would be the time necessary for the full benefit to be appreciated. If a careful investigation of the results of the Illinois law as far as they bear upon the architects were made now, after it has been ten years in force, there is no doubt but that the resulting benefits to the architects themselves would be greatly in evidence. In ten years from the present time or more certainly twenty years there will be scarcely any practicing architects in the State of Illinois who have not passed an examination, and have been approved by the examining board of that state. At the present time nearly one-third of the architects of Illinois are holders of examination licenses, but there still remain the two-thirds who obtained licenses without examination on the mere affidavit that they were practicing architecture when the law went into effect, among whom necessarily there must be a large number of men having very little qualification or competence to practice their profession; and it is not likely that any great number of these men will have their licenses revoked for incompetence, the power to do which is conferred upon the state board, and they will always be referred to and put in comparison with competent practitioners by those who cast slurs upon the operation of the law in that state, no matter how carefully it may be enforced. Among these men are naturally a large number with little or no artistic attainments; but yet many of these latter may be skilled in construction, sanitation and the other qualifications required by the law. And this brings us to a consideration of a further misunderstanding on the part of many architects who desire that license laws shall establish the artistic qualifications of architects, such as is contemplated in the registration law now before the British Parliament. This is unconstitutional and impossible in our country. Therefore such laws can only be advocated in the interests of those who seek protection from the results of want of skill in construction on the part of architects and recklessness in carrying on their works, rather than from those who are desirous that a higher order of artistic merit should prevail in our profession. Hence the indifference of many of the leaders of the profession who are in well established practice, to the whole question.

"While the Illinois law had been contemplated and talked about among architects for several years no attempt ever was made to have such legislation until a very serious building accident, which was due to the incompetence of a young architect in supervising his work, incited a very large and well organized trade union of mechanics to suggest that such a law be passed. They were very insistent in the matter; but not knowing how to go about it, they appealed to the Chapter of the American Institute of Architects in their city, not knowing that this Chapter had ever been seriously considering what kind of a law could be framed. The Chapter acted in the interests of this Union in what it did in preparing a draft for the law and advocating its passage, which was subsequently adopted; but the Chapter went further, it anticipated opposition, the same opposition which has arisen in several other states in which such propositions have been defeated by their legislatures. They not only had the powerful political influence of the Trade Union but they called in the assistance of other organizations which might have to do with building operations such as

associations of employers of mechanics, and real estate dealers. Thus it will be seen that the first architects' license law was the evolution of an effort for self protection on the part of large numbers of persons. It was passed without amendment.

"The laws of the two other states are neither of them as perfect or effective, and for that very reason there have been more difficulties in enforcing them; and naturally they have been more subject to criticism.

"The American Institute of Architects has a greater field for usefulness in the enforcement of professional ethics among architects and between architects and their clients than in seeking legislation, because the very fact that it seeks it, lays it open to the charge of personal interest. It has before it also that other great field of activity in fostering educational movements and developing the artistic abilities of those who are practicing our profession. In consideration of all of these reasons your committee has come to the conclusion that the licensing of architects is not a subject on which the American Institute of Architects should take any official action; but that the whole matter should be recommended to the Chapters in the several states, and that the Chapters should first carefully consider whether there is a necessity for regulating the profession of architecture in their states, and if they do that they should first enlist the assistance of those who are most immediately interested in having protection from the acts of incompetent, reckless and dishonest architects; that such Chapters should act simply as advisory bodies, and should not appear before their legislatures as suppliants for such laws, but rather for the purpose of furnishing information when the same is desired.

"Your committee therefore offer the following resolutions:

"Resolved, that the question of the advisability of the examination and registration of architects be left to the Chapters of the Institute and those persons outside of their number who would be most interested in the safe construction of buildings, and that said Chapters furnish such assistance as may be necessary in formulating license laws which will result in regulating the practice of architecture as a profession.

"We further recommend, inasmuch as legislation of this character is being considered in various states, that a standing committee on state registration of architects be appointed whose duty it shall be to keep informed on all such laws or proposed legislation, to give advice to Chapters so requesting and to report from time to time to the Institute.

"All of which is respectfully submitted.

"WM. B. ITTNER, *Chairman.*

"PETER B. WIGHT.

"A. F. ROSENHEIM.

"CHAS. P. BALDWIN."

The course of ten free lectures delivered by Mr. John Quincy Adams, of the Municipal Art Society of Baltimore, has been completed. These lectures were illustrated by lantern slides and were extremely popular. The practical results achieved by this Society prove the value of organizations of this character in educating the people to high ideals of civic art.

Recent Court Decisions

VALUE OF DRAWINGS, PLANS AND SPECIFICATIONS LOST OR DESTROYED
BY THE NEGLIGENCE OF AN INNKEEPER'S SERVANTS.

AUSTIN V. MILLSPAUGH & CO., SUPREME COURT OF MISSISSIPPI.

43 *Southern Reporter*, 305.

In the Circuit Court the plaintiff was awarded nominal damages only, the court having charged the jury that if they believed from the evidence the plaintiff's plans and specifications had no market value, and that he had put his services and other expenses into their preparation without reference to any particular job, and upon the mere chance or possibility that he might have need or use for them on soliciting work in the future, but that there has been no demand for said plans and specifications, and plaintiff had no particular use for them at the time of their loss, and was for some time after their loss not engaged in business for himself, but employed as a draughtsman by others at a salary, and there was no use or demand for them in that capacity, plaintiff could only recover nominal damages for their loss.

On appeal the court said that although the plans might have no market value, it did not follow that the plaintiff must be turned out of court with nominal damages only. In such a case the rule of damages is the value of the article to the plaintiff, and in ascertaining this value inquiry may be made into constituent elements of the cost to the plaintiff in producing it. The court accordingly reversed and remanded the case.

ACCEPTANCE OR REJECTION OF WORK BY ARCHITECT.

STANDARD CONST. CO. V. BRANTLEY GRANITE CO., SUPREME COURT
OF MISSISSIPPI.

43 *Southern Reporter*, 300.

This was an action for the recovery of the value of certain granite and stone furnished to the defendant under a contract between the parties. The defense was that the supervising architect employed by the United States Government, for whom the defendant was constructing the building, had rejected the material, and that, under the provisions of the contract, the defendant had refused to accept it and had ordered it removed.

The contract provided that the contractor should, within twenty-four hours after receiving written notice from the architect or owner, remove from the grounds or buildings all material condemned by him, and take down all granite which the architect should by like written notice condemn as unsound or improper, or disconform to the drawings and specifications. It also provided that all granite should be satisfactory to the architect, and that payment would be made within thirty days after delivery and acceptance of the granite by the architect. There was no allegation or proof that the architect in rejecting the granite was guilty of any fraud, or of any such gross mistake as would imply fraud, or of any dishonest exercise of his judgment. In these circumstances the Court of Appeals held that the Circuit Court should have given a peremptory instruction for the defendant. It was not competent for the court to go back of the judgment of the architect and revise his actions. Judgment for plaintiff reversed and cause remanded.

LIABILITY OF ARCHITECT ON HIS PROMISE TO PAY COMMISSION FOR
PROCUREMENT OF A LOAN FOR HIS EMPLOYER.

MCCRARY V. THOMPSON, KANSAS CITY COURT OF APPEALS,
MISSOURI.

100 *Southwestern Reporter*, 535.

The plaintiff, McCrary, sued as the receiver of the Surety Trust Company. The facts of the case are as follows: Sutton, the agent of the Trust Company, and the defendant, Thompson, an architect, were friends. Sutton, acting for the Trust Company, sold to a Mr. Beckett a piece of land. Mr. Beckett informed Sutton that he proposed to build an apartment house upon the property, but would have to procure a loan. Through Sutton's introduction Beckett saw Thompson and employed him to draw the plans for and superintend the erection of the proposed building. His fee was to be $3\frac{1}{2}$ per cent. of the cost of the building. Soon after Thompson met Sutton and told him that if he would procure a loan for Beckett, so that the deal would go through, he would pay him $1\frac{1}{2}$ per cent. of the cost of the building as compensation. It was subsequently found that the cost of the building would be \$18,000, and Beckett refused to build under the conditions. Sutton failed to procure a loan and Beckett obtained the necessary funds elsewhere. Thompson reduced his fee to \$500, which sum Beckett paid him. The plaintiff claimed that after the reduction of Thompson's fee the latter promised to pay Sutton \$175 in settlement of his claim, and he sued for that amount.

The court held that in the first place the plaintiff could not recover on the original contract, because the company had failed to procure the loan, which was the condition upon which Sutton was to receive a part of Thompson's commission. He could not recover upon the alleged subsequent promise, because the only consideration for the promise was his claim for services. As he had given no services, and was not entitled to any compensation therefor, there was no consideration for the promise. Plaintiff's claim that the promise was a compromise of the company's demand put him in no better position, since, the contract not having been carried out by the company, there was no consideration on which to base a compromise. The court therefore gave judgment for the defendant. At the same time it did not agree with the opinion of the court below that such a contract made by an architect is void as against public policy. The court said that while it was true that Thompson's agreement to pay the plaintiff a part of his commission for the procurement of a loan to his employer was to further his own interests, since he could gain no compensation unless the building was erected, he was also furthering the interests of his employer, who could not build unless he obtained a loan, and such a transaction did not amount to a trafficking in the profession of an architect.

ANNOUNCEMENT.

In our next issue, March 11, will be concluded the series of articles on public school buildings in the city of New York. These four numbers, containing more than sixty plates and twenty-five text cuts, present a complete record of the newer school houses designed by Mr. Snyder.

THE AMERICAN ARCHITECT

AND
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Proposed Widening of Fifth Avenue—The Architecture of Municipal Buildings—The Preservation of the Ancient Landmarks of Rome—The Restoration of the Baths of Diocletian.	

IN harmony with Mayor McClellan's message to the New York Board of Aldermen, delivered on January 6, formal notices have been served by Corporation Counsel Francis K. Pendleton upon the proprietors of the Waldorf-Astoria, the Knickerbocker Trust Company, the Café Martin, Sherry's and numerous other properties having projections which encroach beyond the building line on Fifth avenue, calling upon them to sign a stipulation or agreement in accordance with which they will cause the offending projections to be removed by January 1, 1909. In the case of owners failing to sign a satisfactory form of agreement, the city proposes to at once institute proceedings to force such removal. If present plans are realized, the actual work of setting the curbs back seven and one-half feet nearer the building lines, and thus broadening the street for vehicular traffic a matter of fifteen feet, will be undertaken in January of next year and the promised relief afforded not later than the autumn.

THAT many of our municipalities fail to attract or satisfy in the architecture of their buildings is due, perhaps, as much to lack of precept and example as to indifference on the part of those charged with the administration of municipal affairs. Until comparatively recent years civic centers and set plans for municipal improvements were practically unknown in this country, and under such conditions it is not surprising that little was done toward beautifying towns and cities; but with the very rapid growth in civic improvements and the increased attention accorded matters of this description of late we may confidently look forward to a not distant day when a town of one thousand inhabitants without a

definite plan and style for municipal improvements will be a rare exception. Even the smaller centers of population can profitably adopt a general plan for future improvements, including a style and type of public buildings, which individuals in sufficient numbers will gladly supplement, to provide a civic character that will not only attract favorable attention, but will add immeasurably both to the artistic and commercial value of the entire hamlet or village.

THE Syndic of Rome and his advisers have at length given heed to protest and caused the destruction of the walls of Rome to cease. It is somewhat remarkable that the demolition of these ancient monuments could be sanctioned by the authorities and permitted by the Archæological Commission, to whose care they are specifically entrusted, without a most thorough investigation and the most careful and deliberate consideration. But we are led to believe that the Syndic and his council only required a personal inspection of the work of destruction to convince them that the protests were justified and further work should be forbidden, from which it would appear that the Syndic was not in reality cognizant of the facts until protest was made. And concerning those guardians of Roman antiquities, the Archæological Commission, if the members must have their attention called to any occurrence demanding their action before giving it consideration, there would seem to be little gained by continuing the commission's existence.

WE are informed that the damage done to the walls is irreparable, and, as other and almost equally regrettable instances of the destruction of the priceless relics of ancient Rome are not lacking, the public may well be apprehensive as to the security of these treasures of antiquity. An instance of the lack of appreciation and care given these ancient relics is furnished by the case of the Church of St. Eligio degli Orefici, located between the Via Giulia and the Tiber. This beautiful building was begun by Raphael in 1509. It now stands neglected and forgotten, with portal broken down, surrounded by dirt and filth, and used as an old furniture storehouse.

AMONG the many projects put forward as fitting adjuncts to the celebration of the Festival of Rome in 1911, we have had our attention called to none that appear more appropriate or commendable, and at the same time ambitious, than the restoration of the Baths of Diocletian, although just how far it would be practicable to carry this work on the lines of a true restoration there would seem to be some question. The original edifice as completed in 305 covered approximately a square mile and provided accommodations for more than three thousand bathers. The Church of Santa Maria degli Angeli, constructed by Michael Angelo out of the converted sudatorium and tepidarium of these baths, constitutes one of the most magnificent structures that have descended to us from ancient times. Another notable building upon which Michael Angelo bestowed his rare genius, the National Museum, occupies a portion of the site, and shelters within its walls the archæological treasures unearthed during building operations in the city of Rome during the last half century. Other institutions and dwellings cover the remainder of the site, and it will be interesting to know the plan and scope of the project proposed.

THE AMERICAN ARCHITECT

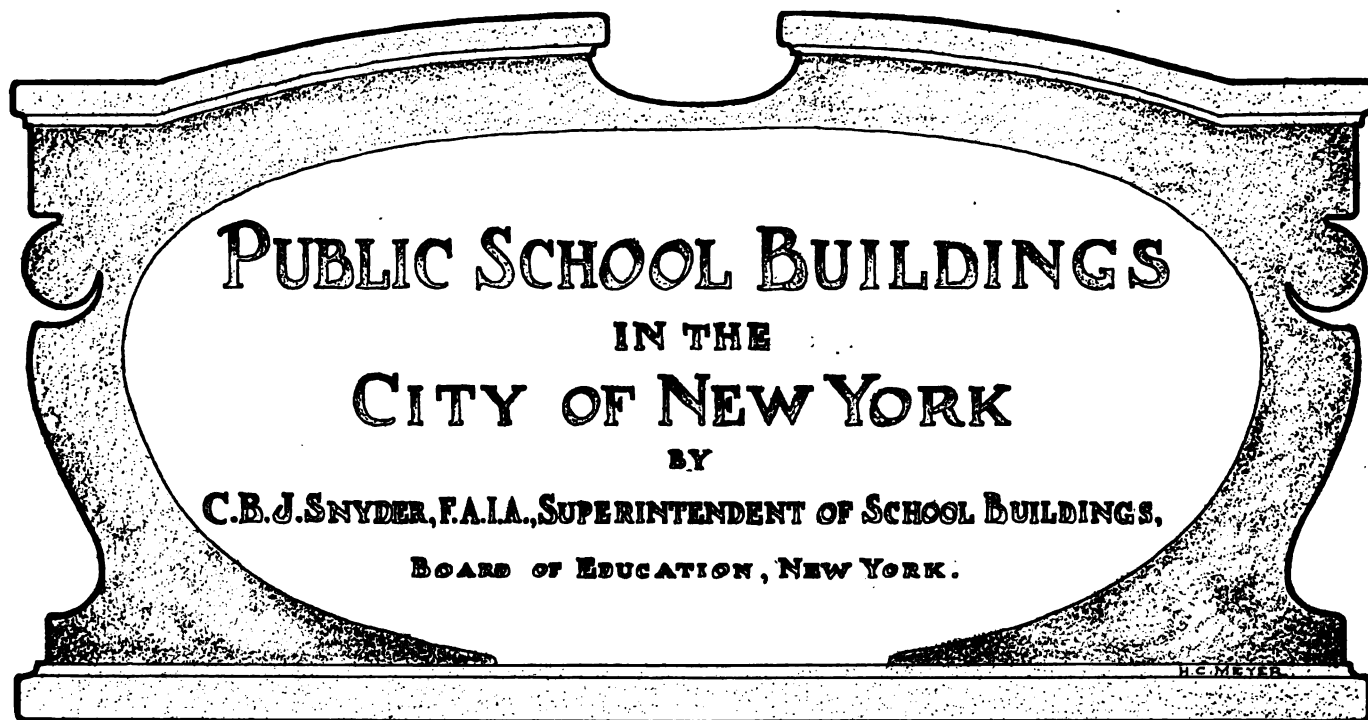
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PART IV

Plate 44.—The Curtis High School, Richmond. The illustration is somewhat unfortunate, since it does not show the gable end, for, owing to a very sharp descent of the land at the right and obstructions at the left, it is about the only point of view for a camera.

Plates 46, 47 and 48, showing the layout of the floors, serve to emphasize the statement that the building has never been completed, it having been designed to come within a certain figure, necessitating the omission of the assembly hall planned for the rear of the building on the first floor, the same as the Morris High School.

The gymnasium is therefore used as an assembly hall. The attendance has increased so rapidly that in the near future an addition must be undertaken which will also include the assembly hall.

As the structure is incomplete a statement of cost would be of no value.

Plate 49.—The Erasmus Hall High School, Brooklyn.

The original school seen through the archway (Plate 53), together with its numerous annexes and additions, covers practically the entire plot except a space across the front. Being all of frame construction and

nowhere supplying an assembly hall, instructions were received to proceed with a comprehensive plan for the improvement of the whole site, some 250 feet wide by 500 feet in depth, running through from street to street, the first portion of which (Plate 50) was to contain a hall, together with a library, certain laboratories, etc., the total cost being limited to a certain sum.

Plate 54 of the interior shows also the usual arrangement of platform for all high schools, which is made of sufficient size to accommodate the graduating class, groups of visitors, also for public meetings. The use of scenery or curtains is strictly forbidden, and, in fact, cannot be used, there being no provision made therefor, and the platform so designed that a curtain dropped at the rear of the opening would reduce the available area by over one-half, rendering the balance useless.

Plate 57 indicates the proposed arrangement for the completed building.

Plate 59.—Public School 130, Brooklyn, was erected when there was a demand for only sixteen schoolrooms to provide for the children in the neighborhood.

It was reasoned out that it would be far better to have

a completed basement, with heating and ventilating apparatus, playroom and toilets all complete, with stairways at the right points and only two stories high, than to put



FIG. 1. MACHINE SHOP: MANUAL TRAINING HIGH SCHOOL.

up a portion of the structure divided vertically and four stories high, in which almost nothing would be complete or occupy its proper position relative to a completed structure.

The third tier of beams was therefore placed level, the necessary pitch for the temporary roof being obtained by the use of cinder concrete; all upper columns were provided with flanges for the receipt of the next tier, arrangements being also made to carry up the stairways, steam pipes, heating and ventilating ducts, plumbing and electric work whenever required.

This time came very soon, and the building was completed as shown in Fig. 3 without disturbing the occupation of the lower floors.

The erection of a building in two parts, however, al-



FIG. 2. FORGE ROOM: MANUAL TRAINING HIGH SCHOOL.

ways adds greatly to the cost, exceeding 10 per cent. in some cases, and it is a grave question whether it would not be far wiser to complete the structure in the first instance, even with some vacant classrooms.

Plate 60.—Public School 33, Richmond, is one of a very few frame buildings erected by the Board of Education during the past fifteen years, and has been designed to serve what is now a sparsely settled community, but which in a twelvemonth—such are the rapid changes caused by real estate operations—that this building will have to be moved to one side and a large brick structure put in its place, or perhaps this may be deferred several years. This two-classroom building represents the smallest of all the schools we have built.

Thus again local conditions become the factor of greatest control, and when these change almost year by year the problem becomes more and more complex and difficult of solution.



FIG. 3. PUBLIC SCHOOL NO. 130 (COMPLETED).

Tables of Cost

SCHOOL 37, BOROUGH BRONX. YEAR 1903.

Total accommodation, 2,450. Number classroom units, 53. Cubic contents, 1,566,300 cubic feet. Cubic feet per classroom unit, 29,553. Area second floor, 17,990. Area classrooms, second floor, 10,620, equals 59 per cent.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost per Cu. Ft.	Cost per Pupil	Cost per C. R.
Building.....	\$359,025	.842	\$0.229	\$146.54	\$6,774.06
Heating.....	36,900	.087	.024	15.06	696.22
Sanitary.....	18,755	.044	.012	7.65	353.87
Electric.....	11,488	.027	.007	4.69	216.75
Totals.....	\$426,168	1.000	\$0.272	\$173.94	\$8,040.90

Remarks.—First story indoor playroom; auditorium under large courtyard; 4 units devoted to offices, shop and cooking. Pile foundations; quicksand. High-water level.

SCHOOL 147, BOROUGH BROOKLYN. YEAR 1904-1905.

Total accommodation, 3,950. Number classrooms, 83. Cubic contents, 2,415,389. Cubic feet per classrooms, 303,819. Area second floor, 28,957. Area classrooms, second floor, 171,604.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost per Cu. Ft.	Cost per Pupil	Cost per C. R.
Building.....	\$417,745	.796	\$0.172	\$107.1	\$5,221.8
Heating.....	49,267	.094	.020	12.6	615.8
Sanitary.....	36,142	.070	.015	9.3	451.8
Electric.....	21,885	.040	.009	5.6	273.5
Totals.....	\$525,039	1.000	\$0.216	\$134.6	\$6,562.9

Remarks.—Flat roof.

Figures 4 and 5, terra-cotta ornaments, are placed on each new schoolhouse.



FIG. 4. SEAL OF THE BOARD OF EDUCATION, NEW YORK.

TABLES OF COSTS (Continued).

SCHOOL 137, BOROUGH BROOKLYN. YEAR 1901.

Total accommodation, 1,300. Number classroom units, 35. Cubic contents, 835,300. Cubic feet per classroom unit, 23,866. Area second floor, 9,715. Area classrooms, second floor, 5,511, equals 56.7 per cent.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost per Cu. Ft.	Cost per Pupil	Cost per C. R.
Building.....	\$152,729	.812	\$0.183	\$117.48	\$4,363.69
Heating.....	18,568	.099	.022	14.28	530.51
Sanitary.....	12,700	.067	.015	9.77	362.86
Electric.....	4,211	.022	.005	3.24	120.31
Totals.....	\$188,208	1.000	\$0.225	\$144.77	\$5,377.37

Remarks.—No cellar. Boilers in basement.

Units devoted to offices..... 1
 " " assembly not subdivided..... 6
 " " gymnasium not subdivided..... 2

Total units not providing accommodations..... 9

SCHOOL 34, BOROUGH RICHMOND. YEAR 1903.

Total accommodation, 400. Number classroom units, 8½. Cubic contents, 214,900. Cubic feet per classroom unit, 25,282. Area second floor, 4,860. Area classrooms, second floor, 2,850, equals 58.6 per cent.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost per Cu. Ft.	Cost per Pupil	Cost per C. R.
Building.....	\$58,010	.828	\$0.269	\$145.02	\$10,547.27
Heating.....	5,683	.081	.027	14.21	1,033.27
Sanitary.....	4,187	.060	.019	10.47	761.27
Electric.....	2,185	.031	.011	5.46	397.27
Totals.....	\$70,065	1.000	\$0.326	\$175.16	\$12,739.08

Remarks.—Boilers, toilets and playrooms in basement. ½ unit devoted to offices.

COMMERCIAL HIGH SCHOOL, BOROUGH BROOKLYN. YEARS 1904-1907.

Total accommodation, 2,669. Number working units, 102. Cubic contents, 2,543,110. Cubic feet per unit, 24,989. Area second floor, 27,160. Area classrooms, second floor, 16,582, equals 61 per cent.

VARIOUS CONTRACTS	Contract Price	Per Cent. Total Cost	Cost per Cu. Ft.	Cost per Pupil	Cost per C. R.
Building.....	\$453,000	.805	\$0.177	\$127.6	\$6,040.00
Heating.....	44,693	.079	.018	12.6	595.90
Sanitary.....	35,311	.063	.014	9.9	470.80
Electric.....	29,628	.053	.012	8.4	395.00
Totals.....	\$562,632	1.000	\$0.221	\$158.5	\$7,501.70

Remarks.—Basement covers entire site.

This article concludes the series of issues on Public School Buildings in the City of New York.

Previous issues on New York Schools are:

January 25—Part I., No. 1674.

January 29—Part II., No. 1675.

March 4—Part III., No. 1680.

Other issues on recently erected school buildings are:

August 10, 1907, No. 1650, The Carnegie Technical Schools, Pittsburgh, Pa.

November 16, 1907, No. 1664, St. Louis Public Schools.

December 21, 1907, No. 1669, Harvard Medical Schools.



FIG. 5. SEAL OF THE CITY OF NEW YORK.

January 4, 1908, No. 1671, Boston Public Schools.

We have in preparation illustrated articles on public schools in other cities, and also schools for special purposes. These will appear during the current year.

Report of Committee on Education, A. I. A.

ACTING under the instructions given at the Convention in Washington, in January, 1907, the Committee has, during the past year, made certain definite attempts to put into practice the principles enunciated in the Report then handed in. It has had no unduly sanguine anticipations as to the possibilities of concrete results in so short a space of time, nor does it believe the Convention entertained such ideas. It feels that the principal work of the Committee must be theoretical, and in the line of establishing general principles; the actual work of putting the plans into practice—should they sufficiently commend themselves to this end—must be at the hands of the faculties of the several schools; on them rests the responsibility of establishing and maintaining an adequate system of architectural education.

Working on this assumption, one of the first acts of this Committee was to invite the heads of five prominent Schools of Architecture, to meet the Committee on Education, and the invitation was accepted by all so invited. All the members of the Committee were present and also Professor Hamlin of Columbia, Professor Warren of Harvard, Professor Chandler of the Massachusetts Institute of Technology, Professor Martin of Cornell, and Professor Osborne, representing Professor Laird, who was absent in Japan, of the University of Pennsylvania. The attitude of the educational representatives was unanimously cordial, interested and enthusiastic, and their council and experience, proved, of course, of incalculable value to the Committee. At this first meeting which held two sessions, one in the afternoon, the other in the evening, the two questions which seemed to the Committee on Education to possess the greatest importance and the best possibilities of concrete results—Interscholastic Competitions and the teaching of advanced design by practicing architects under some form of the atelier system—were minutely discussed, and it was unanimously decided to make a tentative attempt at Interscholastic Competitions, through a general *concours* to be open to two classes of advanced students, to be conducted during the summer months.

So far as actual results were concerned, these experimental competitions were far from satisfactory, the chief reason being that it proved almost impossible to interest the students in summer work, while what was done suffered seriously because of the fact that it was carried on without the oversight of the school authorities. In spite, however, of the fact that the drawings sent in were below the standard of the schools from which they emanated, the Joint Committee is unanimously of the opinion that the results added to the argument in favor of Interscholastic Competitions and they are now perfecting the details of such a competition, to be open to students in advanced design, the work to be done during the school year and to count as part of the course. The general principle has been accepted by the five schools of architecture and the Committee on Education is most sanguine as to the probable results.

It may be said that it is the intention of the Committee to leave the conduct of this competition wholly in the hands of the school authorities, who will arrange all details as to programmes, dates and method of presentation, the judgment being left to the Joint Committee, the

heads of the schools being at liberty to associate with themselves one other representative from each school for the purposes of criticism and judgment, each school having, however, but one vote. The Committee desires to give a first and second medal, and a first and second mention, and asks, therefore, that the American Institute of Architects appropriate the sum of \$150 to cover the cost of the first and second medals, or prizes, which will be presented in the name of the Institute.

The project for providing for the study of advanced design in ateliers under the direction of practicing architects, has been received with less unanimity of approval. As is well known, Columbia University has adopted this scheme in its entirety, while Pennsylvania and Harvard have made more or less indirect approaches towards it. It is still the belief of the Committee that design, at least in its more advanced aspects, can only be taught with complete efficiency through the agency of such ateliers, but it is realized that this change must come as the result of natural growth in response to a distinct demand, and in conformity to the law of the survival of the fittest, and your Committee makes, therefore, no specific recommendations, confident that if they are right in their assumption, the atelier system will come into being of its own accord.

Of far greater significance and importance, in the opinion of the Committee, than either of the schemes noted above, was the formation at this first meeting of a Joint Committee, made up of the Committee on Education and the heads of the Schools of Architecture of Columbia, Technology, the University of Pennsylvania, Harvard and Cornell. As was stated in the report of last year, it was felt that while uniformity of methods was the last thing to be desired as amongst the several schools, there was a tendency on the part of each to consider itself too much as an independent entity, and that in fact the various schools were more or less in the position of the American colonies before the adoption of the Articles of Federation. It was believed that while each school should preserve intact its own personality and its own methods and processes, much might be gained of unity and coherency if they might be allied in some way that would make them all parts of one great and homogeneous general agency of architectural education. This idea received the full approval of the heads of the five schools, and then and there a Joint Committee was formed.

At this meeting many matters were discussed, and all the actions taken were wholly in the line of the general recommendations made in last year's report, viz., towards the correction of the idea that an architect is the proper product of a narrow and intensive system of specialization, but that he is rather a man of broad and inclusive culture, with a special artistic ability in the direction of architecture and trained to handle large affairs in a broad and efficient manner.

Amongst other matters, it was voted that it was the sense of the Joint Committee that a reasonable proficiency in Latin should be a prerequisite to the receiving of a degree in architecture; that in a four year's course in landscape gardening the training for the first two years should not be differentiated in the least from that in the course in architecture, and finally that calculus, while

valuable as a training agency, was by no means indispensable and might well be eliminated in favor of studies that tended more directly towards the development of general culture.

The last meeting of the Joint Committee was given over to the consideration of the design submitted in the Interscholastic Competition, to the formulating of plans for the conduct of such competitions in the future and to a discussion of the proposed extension of the educational period, which extension received the unanimous approval of the Joint Committee.

These matters all seem to your Committee of paramount importance if the general tenor of its former report was sound, and if we are to see architectural education in America aim towards the production of that culture, broad sympathy and learning which are the only basis for the successful practice of the profession. Particularly does it urge that proficiency in Latin be made an integral part of the requirements for a degree, and that the study of the history of civilization and of the development of architectural style as expressing the varying modes of this civilization be given the utmost prominence possible without unduly prejudicing the other branches of education. It also urges the desirability of a certain amount of education in the theory and practice of the other branches of fine arts, these co-ordinate studies running parallel with the special training in architecture, so that while the architecture of Greece is being studied and practiced, there shall be an accompanying consideration of sculpture and the drama, while in the case of Rome, sculpture and lyric poetry would be the accompaniments, with Byzantine architecture, decoration, with Mediæval architecture, sculpture, music, poetry and romance, and with the architecture of the Renaissance, painting, sculpture, music and again lyric poetry. Indeed, your Committee feels in a measure that such co-ordination might go still further, and that Greek architecture should carry with it some knowledge of Greek philosophy; Roman, the development of law and of military science; Byzantine and Romanesque, the early development of the Church, and the rise and influence of monasticism; Mediæval, the history of the Crusades, of feudalism, of the guilds and communes, and of the growth and flowering of monasticism and of scholastic theology, while the Renaissance would bear with it the rise of humanism, of natural science and of the Reformation.

It seems to your Committee that architecture is so intimately associated with the varying civilization it has expressed in the past and must express now, that only by such a broad and inclusive training as this may its function as a visible exemplar of civilization be understood and a proper foundation established for such continued expression in the future.

It may be objected that this would be impossible in the length of time usually devoted to architectural education. The reply to this is perhaps the strongest recommendation your Committee can make at this time. It urges most vigorously that the pressing need in education to-day is not curtailment but extension. Four years is the conventional period now in vogue, and in some schools this is practically shortened to three years by the introduction of a preparatory year, which aims to give boys without education some of the training they would otherwise have received in schools or colleges. For a

limited number of men this four years is extended by from one to three years study of advanced design in Paris, but for the great majority this four years period—or three years where a preparatory year is intruded—is all they get, barring what they may acquire through a few months travel in Europe, and a few years service as draughtsmen in architectural offices.

Now it seems to your Committee that every effort should be made towards establishing the principle that an adequate architectural education consists in four categories: First—a year of preparatory study when this has not been acquired in schools or colleges; second, four years in a school of architecture; third, at least one, and preferably two or three years, given to advanced design in Paris, Rome, or in American ateliers; fourth, at least a year of travel in Europe, undertaken on lines recommended by a board of advisors, to meet the special inclinations or remedy the special deficiencies of the student, who would report regularly to such board during his absence, and on his return submit his sketches and a statement of what he had observed and concluded, to this same board for criticism and advice.

This would give practically a course of seven years, which, as matters now stand, is admittedly impossible for a great number of men. We believe, however, that it is little enough in which to fit a man for one of the most exalted and exacting professions, and we urge it as an ideal, to be upheld by the schools and by the profession, and to be aimed at, even if it is not always achieved.

And in this connection your Committee would suggest that when the atelier system of study in advanced design has become established, as it must in time, scholarships might well be furnished at the various schools, which, at small cost, would give a graduate of an architectural school a year in an atelier in America after which he would be better able to compete on favorable terms for a travelling scholarship, which would send him abroad and give him that familiarity with the artistic record of the old world without which the efficient practice of architecture is impossible.

This Committee is deeply gratified to see the evidences that are multiplying on every hand of a most significant step in the matter of architectural education which has been taken during the last year by many of the more prominent schools. In every instance this advance is directly in the line of this Committee's first report.

At Harvard, acting under the advice of the Faculty, the Corporation is considering the advisability of discontinuing the four year undergraduate course in architecture, and for the future all advanced work will be done in the new Graduate School of Applied Science where the degree of Master in Architecture will be conferred. No one will be permitted to try for this degree who does not already hold a degree from some recognized college or university. The requirements for graduation are not to be stated in terms of years, but in terms of accomplishment. Elementary work may still be done in Harvard College in preparation for entrance into the Graduate School, but any man already holding a degree will be admitted at once to the Graduate School as a candidate for the degree of Master in Architecture.

At the Massachusetts Institute of Technology, the first steps have been taken towards the establishing of a preparatory year, leaving the regular four year course

free for advanced study, while the degree of M.A. is now to be conferred in architecture, as well as in all other departments.

At Cornell there is every prospect that the four years course will be made five for the future, and that the extra time so gained will be divided between pure design and the humanities. By advancing on this line, the schools of architecture are taking place with West Point, Princeton and the technical and scientific schools, where already the danger of overspecializing has been recognized and steps taken to offer a broader and more cultural system of education.

No better statement of the argument for a general broadening of the basis of technical education could be made than that of President Shurman, of Cornell, in his report for 1906-07. He says—"The modern engineer, if he is to be truly educated, needs a training broader than physical science and technical study. He, too, because he is a man needs the culture of the humanities—that liberalizing and expansion of mind which comes from the study of literature, history and philosophy. All over the country men are graduating in the engineering courses with an ignorance of literature, history and the other liberal arts so dense that no proficiency in science and technology can save them from the charge of being uncultured. What has been said of the engineering courses applies with still more force to the work in architecture, since architecture is pre-eminently one of the fine arts which are naturally associated with liberal culture. The leading architects and teachers have come to recognize not only that the technical training given in the professional schools should be improved as might be by strengthening the faculties and by attaching to them practicing architects of recognized standing to supervise and criticise the work in design, but also that some liberal education in the humanities should be required of students before they are admitted to the technical course." President Shurman goes on to quote and indorse the following words of Professor Martin in his Report of the College of Architecture. "There is an emphatic demand for broader cultural training on the one hand; on the other hand the demand is equally emphatic that the technical training not only be kept fully up to the present standards, but that it be strengthened along certain lines. In other words, the profession is demanding that the schools furnish more training. In order to do this, they must either advance their requirements for admission, or lengthen their course beyond the traditional four year period."

With Cornell recognizing and pleading for an extended course both in architecture and engineering, and urging less technical specialization with an increase in all that tends towards general culture; with Harvard raising its standards so that a degree is necessary before a student may enter the school, and with the Massachusetts Institute of Technology preparing to confer the degree of Master of Arts in all departments, and moving at the same time towards an extension of the time given to the architectural course that will permit a great increase in the amount of attention given to matters of general culture, the Committee on Education feels disposed to congratulate the architectural profession most heartily on the changes a year has brought forth since the date of its last Report. In its opinion all these things are indicative of the notable vitality of the American architec-

tural schools, and of the close touch they maintain with the architectural profession. It believes also that the schools realize more fully than ever before, how deeply every architect in the country is interested in their work, how immeasurably indebted to the schools the profession is, and how anxious is each member to be of any service that is possible to the institutions that are creating and training their successors. Your Committee believes that architectural education in America stands distinctly on a higher plane that it did even a year ago, while it is evincing a vitality and adaptability that promise nothing but good.

The Board of Directors have referred to this Committee the question as to why it is that there is often so little competition for the most generous and desirable travelling scholarships that are open to American draughtsmen. The Committee is of the opinion that in many cases where eligibility is restricted to residents of some one city or State, the eligible men have, before the time set for the examination, thoroughly canvassed the situation and practically decided that some particular man is too strong too fight against. This particularly happens when in the previous year there have been two or more notably strong contestants and the fact is known that the one or more such men who were unsuccessful were to try again. This, of course, tends to discourage competition, but it is a condition of things which seems inevitable and for which there appears to be no corrective. The criticism has been made to this Committee that another reason lies in the very broad scope of some of the examinations, when a man must compete not only in design, but in construction, science, mathematics, history and languages, and it has been urged that this tends to discourage men who are perhaps able in design and well fitted to become efficient architects, but who distrust their own powers in the more scholastic branches of education. This question might well be considered further, and may be referred to the Committee of next year.

Another matter that might well engage the attention of this Committee is the possibility of urging upon the War and Navy Departments the possibility of establishing at West Point and Annapolis courses in architecture. Apart from the singularly educational value of architectural education to any man, military, naval or civilian, and the training it affords in connection with an extreme broadening of the mind, is the fact that the officers of the military forces, particularly of the United States, are constantly thrown in contact with building operations of great magnitude and importance. The Corps of Engineers and the Quartermasters Department are and must remain constantly engaged with structural matters where architectural knowledge would be of the greatest value not only to the officers, but also to the country and to civilization at large. Many most lamentable blunders—from an artistic standpoint—have been made in the past and solely from lack of architectural knowledge, by those who are, perhaps, the most highly trained men in the world, and such mistakes would be minimized in the future were the United States Government to broaden still further its curriculum and permit the practical study, at least of the rudiments of architecture and the history of art at West Point and Annapolis. We make this suggestion with the more confidence in that since this committee's report of last year, West Point, has taken a most important step towards the broadening of the

curriculum in the direction of literature and the humanities.

(Signed) JOHN M. CARRERE,
WM. M. KENDALL,
R. CLIPSTON STURGIS,
S. B. P. TROWBRIDGE.
R. A. CRAM, Chairman.

Augustus St. Gaudens

THE address of Mayor George B. McClellan, of New York City, at the recent St. Gaudens Memorial meeting has elicited the warmest commendation from Artist and layman.

The Mayor spoke with the culture, polish and appreciation of a connoisseur and imparted to the ceremonies an air of dignity and impressiveness.

To quote from Mayor McClellan's address, "Greater fame can no man have than this—that it may be truthfully said, he left the world a little better than he found it." His work speaks for itself, being silent testimony to the man's great prowess, to his sincerity, taste, invention and genius. In them will be perpetuated something of the history of our race, something of our struggles, but above all there is humanity, breathing in every touch of the craftsman, and far above all else St. Gaudens' realization of the beautiful.

At the Metropolitan Museum of Art there is now a special exhibition of St. Gaudens' work. There was no money in the appropriations for the museum that could be used for purposes such as this exhibition. The \$7,000 necessary was raised by private subscription. This amount being so readily subscribed by individuals, shows the great esteem in which St. Gaudens was held in this country, and also an appreciation for the good in art that controverts the assertion so often made that this appreciation did not exist in America. A prominent artist commenting on this states it as his belief that it would not have been possible to have secured funds in a similar way, and as speedily, anywhere in Europe.

Most of the originals of St. Gaudens' better known later work are shown at the exhibition. Many pieces treasured by their owners, and not heretofore known to the general public, have been loaned for this occasion. One of the most beautiful of these is a marble middle relief of Mrs. Stanford White; the tabular frame of architectural design surrounding this relief was the work of the late Stanford White.

Decay in Wood Prevented

In circular 139 of the Government Forest Service the subject of wood preservation is treated in a manner at once interesting and instructive. As a result of experiments it is estimated that a fence post, which under ordinary circumstances will last for perhaps two years, will, if given preservative treatment costing about ten cents, last eighteen years. The service of other timbers, such as railroad ties, telephone poles and mine props, can be doubled and often trebled by inexpensive preservative treatment. To-day, when the cost of wood is a big item to every farmer, every stockman, every railroad manager—to every one, in fact, who must use timber where it is likely to decay—this is a fact which should be carefully considered.

It is easy to see that if the length of time timbers can be used is doubled only half as much timber will be required as before and only one-half as much money will need to be spent in the purchase of timber. Moreover, many woods which were for a long time considered almost worthless can be treated and made to last as long as the scarcer and more expensive kinds.

Of the actual saving in dollars and cents through preservative treatment, a fence post such as was mentioned at the beginning might serve as one example. The post is of loblolly pine, and costs, untreated, about 8 cents, or, including the cost of setting, 14 cents. It lasts about two years. Compounding interest at 5 per cent., the annual charge of such a post is 7.53 cents; that is, it costs 7.53 cents a year to keep the post in service. Preservative treatment costing 10 cents will increase its length of life to about eighteen years. In this case the total cost of the post, set, is 24 cents, which compounded at 5 per cent. gives an annual charge of 2.04 cents. Thus the saving due to treatment is 5.49 cents a year. Assuming that there are 200 posts per mile, there is a saving each year for every mile of fence of a sum equivalent to the interest on \$219.60.

In the same way preservative treatment will increase the length of life of a loblolly pine railroad tie from five years to twelve years, and will reduce the annual charge from 11.52 cents to 9.48 cents, which amounts to a saving of \$58.75 per mile.

It is estimated that 150,000 acres are required each year to grow timber for the anthracite coal mines alone. The average life of an untreated mine prop is not more than three years. By proper preservative treatment it can be prolonged by many times this figure. Telephone and telegraph poles, which in ten or twelve years, or even less, decay so badly at the ground line that they have to be removed, can, by a simple treatment of their butts, be made to last twenty or twenty-five years. Sap shingles, which are almost valueless in their natural state, can easily be treated and made to outlast even painted shingles of the most decay-resistant woods. Thousands of dollars are lost every year by the so-called "bluing" of freshly sawed sapwood lumber. This can be prevented by proper treatment, and at a cost so small as to put it within the reach of the smallest operator.

In the South the cheap and abundant loblolly pine, one of the easiest of all woods to treat, can by proper preparation be made to take the place of the high-grade long-leaf pine for many purposes. Black and tupelo gums and other little used woods have a new and increasing importance because of the possibility of preserving them from decay at small cost. In the Northeastern and Lake States are tamarack, hemlock, beech, birch and maple, and the red and black oaks, all of which by proper treatment may help to replace the fast-diminishing white oak and cedar. In the States of the Mississippi Valley the pressing fence-post problem may be greatly relieved by treating such species as cottonwood, willow and hackberry.

Circular 139 of the Forest Service, "A Primer of Wood Preservation," tells in simple terms what decay is and how it can be retarded, describes briefly certain preservatives and processes, gives examples of the saving in dollars and cents, and tells what wood preservation can do in the future. The circular can be had upon application to the Forester, Forest Service, Washington, D. C.

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AND

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WHILE a holocaust such as that which occurred with the burning of the Slocum shocked the nation, and the frightful loss of life at the Iroquois theatre fire and at the Boyertown disaster plunged the country in mourning, the appalling picture presented by the accounts of the schoolhouse fire at Collingwood, O., where one hundred and seventy innocent little children were slaughtered, is bound to arouse a still more profound feeling of grief and horror. The lives of these little ones were sacrificed, not in a venture upon a pleasure boat, nor in any other more or less hazardous form of amusement, but in the regular routine of their daily lives and in a building provided for them by the authorities whose duty it also was to see that it was safe.

FROM the illustrations of school buildings shown in THE AMERICAN ARCHITECT from time to time it is very apparent that this class of work has received much attention from the authorities, and eminent architects have devised plans designed to afford ample means of egress; and a considerable protection is provided by fireproof walls floors and staircases traversed by the pupils in leaving the building. Indeed, it would seem as though the modern school building as erected in our larger cities is reasonably safe; but what can be said concerning the old buildings of which there are a number in New York

as in other cities? While probably there are no locked doors or choked exits, and fire drills regularly enforced have done much to reduce the danger of panic and congested stairways in the school buildings of most cities, these old buildings are far from fireproof and necessarily constitute a menace to the lives of the pupils under even the most favorable conditions. It is to be hoped that the deplorable horror at Collingwood will serve as a reminder, frightful as it is, to those in every city of the nation, charged with the responsibility of providing school accommodations for the children, that their duty is not done by simply furnishing a seat and shelter for each pupil.

THAT fireproof construction for buildings is not rapidly becoming the universally accepted type is evidenced by the reports of building operations compiled from forty-nine of the leading cities of the United States. These reports seem to indicate the use of non-fireproof construction in approximately 59 per cent. of the buildings erected during the year of 1907, and a great quantity of lumber used in the remaining 41 per cent. From these figures it would seem that the many improved and perfected systems of fireproof construction, even aided by the increased price of lumber, have failed to attract investors to the more permanent form of buildings, in any considerable number.

WHERE non-fireproof buildings are permitted by law they are apparently erected almost invariably, from which we might reasonably infer that the claims put forth by the advocates of some of the newer types or systems of fireproof construction are not accepted. In considering the matter carefully we are inclined to believe that this condition exists largely through lack of definite information concerning, and an unwillingness to consider new forms. Certain it is that for many of the plainer business or factory buildings, if for no others, there are forms of fireproof construction peculiarly adapted, and that they have been substituted for the ordinary wooden construction, under favorable conditions, from motives of economy, if from no other, is a matter of record. With the further improvements in these more permanent forms of building which will undoubtedly follow and with a better knowledge of their adaptability and value, we may expect to see the proportion of permanent buildings erected in this country increase materially within the next decade.

THE competition recently conducted by the Architectural League of New York in which groups of three, an architect a painter and a sculptor competed, the problem being an out of doors swimming pool and pavilion, is but another evidence of the appreciation of art as applied to exterior problems. The importance of this competition lies chiefly in the advancement it seems to promise in municipal art by the combining of what might be designated as three of the chief factors in whatever progress may be hoped for. It would seem as though the plan, adding perhaps to each group an engineer, would be an admirable one to adopt in connection with municipal buildings and civic improvements generally.

THE AMERICAN ARCHITECT

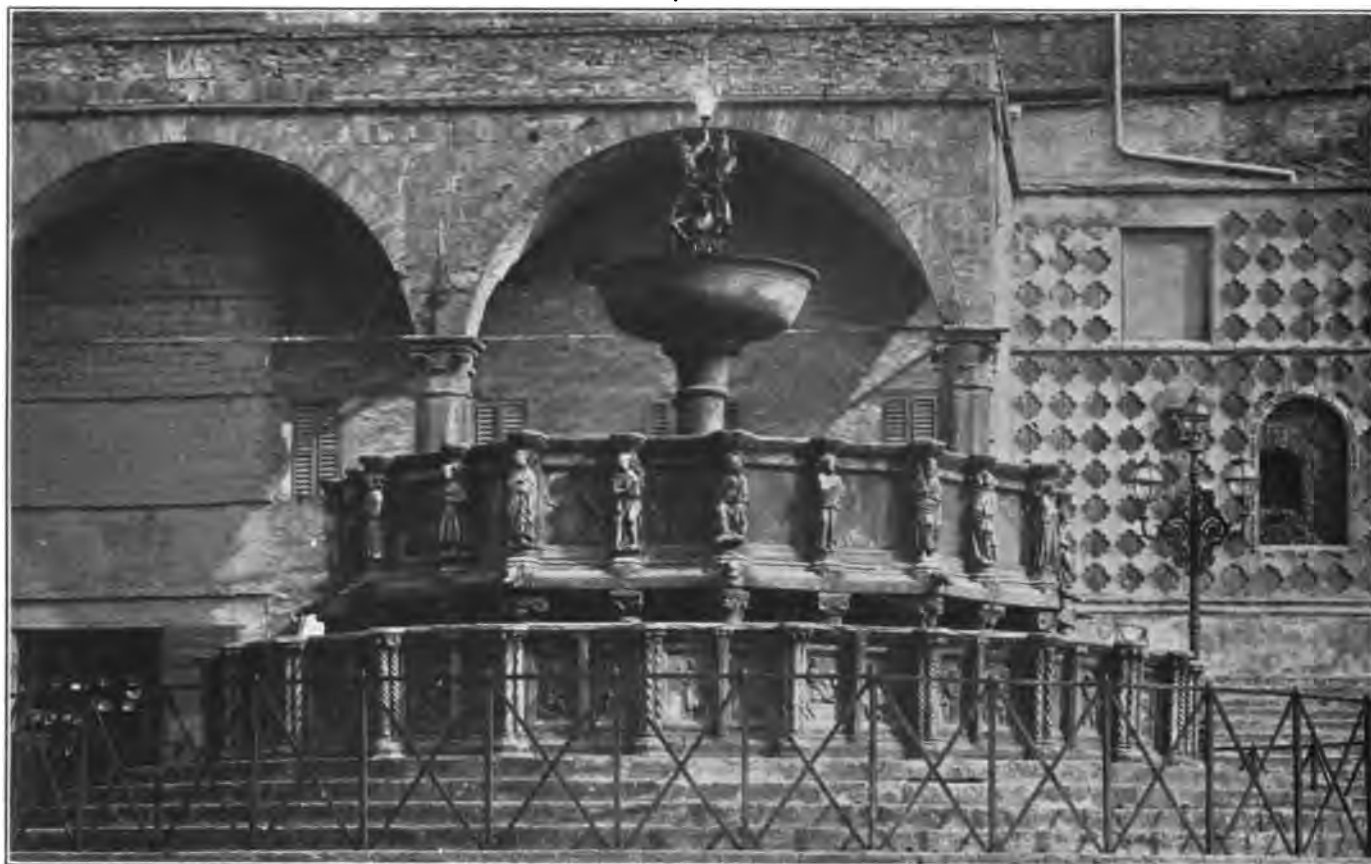
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XIII. CENTURY FOUNTAIN : PALACE DEL PUBBLICO, PERUGIA.

Perugia, Its Paintings and Architecture

THE city of Perugia, like Siena, is of itself a permanent exposition, conceding nothing in splendor and beauty to the more celebrated cities of the Peninsula. It was founded about the 13th century B. C. and soon became one of a dozen villages that were strongly Etruscan. The monuments which yet remain, as, for instance, the sepulchre of the Volumnii, clearly attest the grandeur and power of that distant epoch.

During the Punic Wars Perugia became the ally of Rome, and in the conflict between Octavius and Antonius it was besieged and burned by Caius Cestius, the Macedonian. Rebuilt by Augustus, it became rich and powerful. It was in homage to this Emperor and his grandeur that on one of the doors of the Etruscan Arch of Triumph is engraved the laudatory inscription, "Augusta Perusia."

In the Middle Ages the city fell into the hands of Totila, who, after a long siege, destroyed it. It was taken successively by the Greeks and the Lombards. It en-

gaged in the wars of the Guelphs and the Ghibellines and in the 14th century held domain over Umbria. It held Umbria for only a short time and was itself forced to accept the protection of the Church, against which it disputed dearly the relinquishment of each of its liberties.

Having become involved in civil strife between its nobles and the Respanti (popular party), after a lapse of time during which Riordi Michelotti exercised a preponderating influence over the government, it fell under the dominion of Galeas Visconti, then Ladislaus, King of Naples, and later Braccio Fortebraccio of Montone. At the beginning of the 16th century, after the death of Braccio Fortebraccio, the two powerful families of Oddi and Baglioni struggled for supremacy, the strife continuing up to the time when Pope Julius II, profiting by these internal discords, took the town through the instrumentality of Paolo Baglioni. The successor of Julius II, Leo X, had Paolo Baglioni beheaded in 1520. A son of

Paul III destroyed many of the beautiful buildings of the city, and on the ruins constructed the fortress overlooking Perugia, which took his name, "Rocca Paolina," and was demolished only in the last century, during the Italian Revolution.

From the year 1540 the history of the city of Perugia is confounded with that of the other cities of the Papal States. It was ever witness, however, of an individuality and a spirit of independence which made it almost a revolutionary centre in the years preceding the liberation of the territory and the forfeiture of the temporal power of the popes.

Perugia possesses the most diverse architectural beauty :



TOMB OF BENEDETTO XI., BY GIOVANNI PISANO: CHURCH OF ST. DOMENICO.

the Church of St. Angelo, illumined by ogives; the old church of St. Domenico, attributed to Giovanni Pisano; that of St. Francesco, almost abandoned, with its celebrated clock, the "Viola"; the Gothic Cathedral with its elegant columns; the palace of the Captains of the People; the door of San Pietro, on which Agostino di Duccio and Polidoro di Santo-Stefano imitated the lines of the temple that Sigismond Malatesta erected to the glory of Isotta di Rimini. And one must not fail to cite the marbles sculptured by Pisano, the Sarcophagus of Benoit XI, and the grand fountain which symbolizes the art and the science of the Middle Ages, the facade of the Ora-

torio di San Bernardino with the veiled angels and chubby cherubim of Agostino di Duccio, the Tabernacle of St. Marie di Monteluca, the tomb of the Bishop of Baglione, and the choir stalls of San Domenico.

If the Perugian monuments have an undeniable originality, one of the most remarkable is certainly the palace of Priors. Its construction suffered many interruptions; the most ancient part was executed by Giacomo di Servadio and Giavannello di Benvenuto, between 1293 and 1297, and had but ten windows in each story, instead of the eighteen existing to-day. The ten ancient windows of the first story flank the magnificent Room of the Notaries, ornamented with paintings of historical Perugian subjects. This room is comparable only to the grand room of the Palace of Reason at Padua. The second part of the edifice was begun in 1333 and completed in about six years. The palace was then finished as far as the tower. In 1353 it was entirely completed and the government of the "Seigneurie," as it was called, took possession of the new residence. This remarkable specimen of Italian Gothic architecture is very imposing; the harmony of its lines is indisputable, but it lacks the power which gives so great an attractiveness to the Gothic palace in Siena.

Towards the middle of the 15th century an addition to the palace, the Collegio del Cambio, was built beyond the clock tower. Particularly to be noted is the Room of the Notaries, ornamented with paintings dating from the beginning of the 14th century, and on the walls one sees the arms of the Podestas and the Captains of the People. The room of the College of Merchants is also of interest, containing admirable sculpturing by an unknown artist of the 14th century.

The grand Maggiore fountain, dating from the 13th century, is the work of Fra Bevignato and Boninsegna, and is rendered more splendid yet by the sculptures of Nicolo and Giovanni Pisano and by a bronze cup attributed to Rosso. An interesting comparison could be made between the "Fonte Gaia" of Siena and the fountain of Perugia, both of which have contributed powerfully to the renown of the sculptors of Pisa.

The facade of the Oratorio di San Bernardino is an architectural masterpiece. Its harmonious coloring reveals all the science of Agostino di Duccio, whose work may be also seen in the temple of Malatesta at Rimini. The marbles resembling the various colors of the brown earth, together with the sculpture, unite to make a most artistic ensemble. The double door is surmounted by a delicate moulded band. The circular tympanum, having in the centre the figure of a saint, is in excellent keeping with the general decorative treatment. Four statues occupy the niches on each side of the doors, and at the right and left of the tympanum. The pediment, very simple in treatment, shows a central figure of Christ in the attitude of benediction.

The Church of St. Peter of Mont-Cassin is an interesting architectural creation of the early years of the 11th century. Its ceiling rests on Ionic columns. It contains, besides a great quantity of the paintings of Pontormo, Sassoferrato, Perugino and Parmesan, a very beautiful altar in marble, attributed to Mina da Fiesole. The choir, a chef-d'œuvre of marquetry, is the work of Stefano di Bergamo.

The Church of San Domenico, considered the largest of all the churches of Italy, contains the tomb of the

Pope, attributed to Giovanni Pisano, and is one of the most imposing examples of this class of sculpture. This empty tomb shelters under a sort of canopy a statue of



TOMB IN CRYPT OF CATHEDRAL.

the pontiff, lying in a tragic pose upon a couch. Two female figures draw the curtains which serve to conceal it partly, and the busts of saints and various ornaments decorate the lower and central parts of the monument, which are finished in mosaics. In the upper part of the monument, forming a triptych, are the Virgin and two saints. Below is the Pope in a kneeling posture. Strange pontiff, this Benoit XI, who, elevated in haste at the death of the terrible Boniface VIII, reigned but a year. Tossed into the midst of factions, without authority, he wandered from city to city, finally coming to his death at Perugia. This church contains also a great glazed window of a workmanship which one cannot too highly praise. It is the creation of Fra Bartolomeo of Perugia, and was completed in 1441.

The Cathedral was never finished. It dates from the end of the Gothic period and does not show the refinement of line found in the older monuments. It is constructed with three naves and a transept. The sculptures that it contains are of the first order. The Gothic pulpit and the tomb of the Bishop of Baglione, by Agostino Duccio, first claim attention. The reclining statue of the Bishop rests on a catafalque, supported on a double pedestal composed of marble in several colors. Resting on the central console are figures of Science, Justice, Temperance and Courage. Fluted pilasters encircle the niches.

A statue of Pope Julius III, erected in the neighborhood of the Cathedral, is the strongest conception of the Perugian sculptor, Vincent Danti, who lacks nothing in sincerity, in spite of the fact that he plainly belongs to the 16th century.

The palace of the Captains of the People was designed by Gasperino d'Antonio and Leone di Matteo and finished in 1472. It offers a curious mixture of styles. The pilasters and the entablatures of the windows belong to the Renaissance, while the division of the windows by a fine central colonnade shows the survival of an earlier

period. The facade has the same varying character, which gives to the structure an original appearance.

The Church of St. Constant has an extremely curious door, of the 13th century, surmounted by a jutting arch crowned with a low pediment. On each side are sculptured symbolic animals, with forms slightly fantastic, after the usual medieval style. Dominating the whole is a figure of Christ in benediction, surrounded by four figures of the Apocalypse.

Near the city of Perugia is the ancient monastery of St. Julian, erected in the 13th century. A notable feature is a brick cloister containing two rows of small brick columns, with fine capitals varied according to the fancy of the artists of this period. Worthy of mention also are the church of St. Marie of Monteluca, the tower of St. Monica (on which is a celebrated Etruscan inscription), the ancient church of St. Prosper, with its primitive frescoes, the convent of San Severo and the Church of St. Ercolano.

At a short distance from the city was discovered, in 1540, the tomb of the Volumnii, one of the best preserved of the Etruscan necropolises. The sarcophaguses found in the neighborhood were restored. The interior of the sepulchre numbers six chambers containing Etruscan urns. One of these tombs, that of the chief of the family of Volumnii, is very beautiful and is decorated with bas-reliefs and inscriptions dating back to the third century before Christ.



TOMB OF VESCORA BAGLIONI: CATHEDRAL OF ST. LORENZO.

The first teaching in art came to Perugia from abroad. Florence and Siena, whose radiance extended far, sent to Perugia their sculptors and their architects, who con-

structed the greater part of the edifices of this region, both sacred and profane.

At the very commencement of the Renaissance a school of painting was formed in Umbria. Under this Florentine and Sieneſe influence Gubbio, Foligno and Perugia became the three principal centres of the Umbrian School of Art. And there, little by little, it acquired its special qualities, its luminous and soft coloring, under the influence of the verdant and harmonious scenery, the wide horizons bounded by the high mountains, the hills and the fertile plains. It was there that the spiritualism of St. Francis of Assisi and Jacopone da Todi asserted itself, and it is to be found later in the works of artists at an epoch in which, according to the word of Carrado Ricci, while political hatred ran riot in the streets, Art revived and filled the churches with angels, madonnas and saints.

Like the Sieneſe, they painted their figures with mysticism, but did not fail to place in their golden backgrounds the scenery of the region, maintaining a perfect equilibrium between the natural and the mystical.

The most ancient name recalled by the art chronicles is that of Oderisi di Gubbio, whom Dante had already named with approval. He was the initiator and guide of his contemporaries and successors, notably of Guido Palmerucci (whom one might consider as the founder of the Umbrian School), of Allegretto Nuzi, of Gentile da Fabriano, of Ottaviano Nelli, who, abandoning the harsh and rough methods of the faithful followers of Giotto, made a great forward stride towards

the representation of life, and the advancement of art.

With Pietro Vanucci (Perugino) the Umbrian School reached the culminating point in its renown. The frescoes of the Collegio del Cambio would in themselves serve to immortalize the name of this great painter, who seems to have imparted his rare gifts to Raphael, his most illustrious pupil.

There is in the Pinacothèque a room set apart for the work of this master. Some of his portraits of saints are in the Convent of St. Severe. The greater part of Perugino's pictures have been scattered throughout the world, finding lodgment in famous collections, but enough remain in the city of Perugia, from which he took his name, to attest the greatness of his talents.

There was almost no sculpture in Umbria, but on the other hand, the goldsmith's art was developed in an extraordinary degree. It passed through the same phases as painting. It attained its height at the beginning of the 16th century, after three centuries of production and evolution. Weaving and embroidering were also of great importance. Exercised at first entirely in the convents, these crafts, passed the doors of the cloisters and were taken up by the free artisans.

A visit to this interesting Italian city will prove of great value to the architect, as its buildings are a veritable museum of architectural achievement, while the artist will find ample reward in the study of the frescoes and paintings that so splendidly show the best of the Italian Renaissance.

A National Gallery of Art

IT will be welcome news to art lovers throughout this country to learn that a National Gallery of Art is now assured. That there has been a National Art Gallery in the United States since 1846 will also cause some surprise among artists and patrons of the arts who have deplored the lack of appreciation on the part of Congress of the importance of fostering art in America and its failure to supply funds for the maintaining of a place of exhibition under the patronage of the National Government.

In 1846 Congress charged the Smithsonian Institution with the custodianship of all objects of art belonging to the United States. In the Smithsonian building, which was immediately put in course of erection, two rooms were especially designed for the collection of art.

Among the first acquisitions by the institution were examples of art, but the fund that could be spared from the income of the institution for this purpose was insufficient to make any material progress in this direction.

The first collection purchased was a series of prints assembled by the Hon. George P. Marsh and contained examples of the work of nearly every etcher and engraver of celebrity from the early masters to the middle of the last century. Later accessions donated to or purchased by the institution include paintings, reproductions of celebrated pieces of sculpture, busts of distinguished individuals, and many important books on art. Of the examples of art accumulated by the institution up to 1906, none had been secured by any appropriation of moneys by Congress. The funds for their purchase were supplied by the institution, which from time to time

had set apart such amounts as could be spared from the income from the Smithsonian bequest.

In January, 1906, the Board of Regents accepted the notable collection of Mr. Charles L. Freer, of Detroit, and this marked the beginning of a new epoch in the affairs of the gallery of art. In the following July a further advance was made through the acquisition of the valuable collection of the late Harriet Lane Johnson, based upon a decision of the Supreme Court of the District of Columbia, essentially reaffirming the intent of the fundamental act that the custodianship of the National Gallery of Art was vested in the Smithsonian Institution.

This decision, of such far-reaching importance to art lovers throughout the United States, was, in part, as follows:

It is, therefore, on this eleventh day of July, in the year 1906, by the Supreme Court of the District of Columbia, sitting in Equity, and by the authority thereof, adjudged, ordered and decreed:

That there has been established by the United States of America in the City of Washington a National Art Gallery, within the scope and meaning of that part of the codicil bearing date April 21, 1902, made by the said Harriet Lane Johnston to her Last Will and Testament, in the proceedings in this case mentioned, wherein she gave and bequeathed the pictures, miniatures and other articles, to the Trustees of the Corcoran Gallery of Art, and in the event of the Government establishing in the City of Washington a National Art Gallery, then that the said pictures and other articles above mentioned should be delivered to the said National Art Gallery and become its property; and that the said National Art Gallery is the National Art Gallery established by the United States of America at, and in connection with, the Smithsonian Institution located in the District of Columbia and described in the Act of Congress entitled an Act to establish the "Smithsonian Institution" for the Increase and Diffusion of Knowledge among men, and the

subsequent Acts of Congress amendatory thereof; and it is further adjudged, ordered and decreed, that the United States of America is entitled to demand and receive from the surviving Executors of the said Harriet Lane Johnston all of the above mentioned pictures, articles of sculpture, engravings, miniatures and other articles, the same to be and become a part of the said National Art Gallery so established by the United States of America at, and in connection with, the said Smithsonian Institution.

During the latter part of the winter of 1906 the gallery received a most substantial and gratifying recognition from Mr. William T. Evans, of Montclair, N. J., whose contribution consisted of 56 paintings in oil by American artists of established reputation. Unfortunately, no place could be found in the museum building for this valuable collection, and it was necessary to provide elsewhere for its temporary keeping. This has been accomplished through the courtesy of the trustees of the Corcoran Gallery of Art, where the pictures are now hung, filling the greater part of the large atrium.

Leaving out of consideration the Freer collection, which is to remain at the home of its generous donor during his lifetime, the National Gallery now has in its possession valuable paintings and other art objects for whose exhibition under suitable conditions it is important to arrange without delay. For this purpose there is no better place in the existing buildings than the second story of the main part of the Smithsonian building, a hall 200 feet long by 50 feet wide. It will require some changes to adapt it to the hanging and lighting of pictures, and some improvement in its approaches, which are now inconvenient for the public, involving an expenditure greater than is possible from the current appropriation, but it is hoped that Congress will provide for this work at its present session.

The existence of a National Gallery of Art having been shown, and its right to claim from Congress appropriations for its support and maintenance being facts, it is felt that the future of the gallery is assured. Independently of the National Gallery a movement has been initiated by the National Society of the Fine Arts of Washington to call a convention of delegates from all art associations of every description throughout the country, to meet in Washington next May, to form a federation under a charter already granted by Congress.

The object of the proposed federation, generally speaking, is, to encourage the study of art and the cultivation of the public taste:

1. The organization of art clubs and societies.
 2. The establishment of art schools and local art galleries.
 3. To encourage American artists; to secure their recognition and to increase their compensation.
 4. To secure the removal of the duty on works of art and books and other publications devoted to the fine arts.
 5. To improve national, state, municipal and private architecture.
 6. To extend public parks and playgrounds and to encourage individuals to beautify their own property.
 7. To promote all movements for village improvement and plans for beautifying cities.
 8. To assist in preserving natural scenery from destruction and desecration and to extend the national park system.
 9. To assist in the protection of the forests and streams; to encourage the planting of trees, the planting of flower gardens and decoration of door yards and everything that will embellish the public streets of our cities, towns and villages.
 10. To assist in the publication of a magazine devoted to news concerning art and kindred topics. The proposed magazine is to be the organ and exponent of the federation.
 11. To support and advance the interests of a national gallery of art.
 12. To assist in securing the erection of an appropriate building for the National Gallery at Washington.
- That no time may be lost in providing a permanent home for the collections above referred to, as well as for subsequent additions, plans for an independent gallery have been prepared by Hornblower & Marshall, architects, of Washington, D. C. These plans have been approved by the Board of Regents and submitted to Congress.
- We learn that the Committee of Selection for Collections will be composed of Professor W. H. Holmes, of the Department of Ethnology, Smithsonian Institution, who has been prominently identified with art matters for a number of years; Mr. F. D. Millet, and three members, one of whom will be designated by each of the following bodies: The National Academy of Design, the National Sculpture Society, and the Fine Arts Federation.

Unwarranted Criticism of the Modern Architect

IT would appear to those with knowledge of the source of certain articles appearing from time to time in various monthly magazines that the only qualification necessary to entitle these writers to engage in art criticism is a smattering of stock phrases and an unusual conceit in their conviction as to the correctness of their point of view.

We are reminded of this by an article appearing in a paper designed to educate the home-maker along artistic lines.

This writer states: "But the modern architect is slow to learn his limitations. He yearns for supremacy and pants for control. He must, he lays down as his first and

last principle, be the Boss. Being boss, he takes everything into his own hands; yet he hardly puts pencil to paper before he finds out he must call in others—men engaged in other occupations and trained in other knowledge."

It is further stated:

"The modern knowledge of architects is, on the whole, limited to a comparatively recent period. We do not know for a fact what the old architects did and what relationship they bore to their building."

We quote thus in detail as an instance of how little some writers on art and kindred matters know of their

subject, and how at variance with the facts is the writer's conception of the conduct and practice of architects.

It is well known what the duties of the ancient architects were, more particularly those of Greece and Rome. We know the architects then were the master-builders, and that it was the custom to assign to various assistant architects or builders that particular share of the work in which they exhibited the greatest skill. That the master-builder or chief architect called to his assistance the demonstrated ability of different builders, just in exactly the way the modern architect does, who enlists to his aid specialists in the various problems that are to be found in the large isolated buildings and groups of buildings being erected all over this country.

No one doubts the Grecian architect dominated the entire work—that he “bossed the job,” just as his present-day brother does, and for which he incites the wrath of the writer above referred to.

And, if the Grecian architect called on the services of a brother builder to engineer his foundation, we know how stable a base he supplied for the superstructure that crowned it. Coming down to the Medieval Age, the architects were perhaps more to this critic's liking. They did it all themselves, if records are true. A writer in the English *Spectator* has the following to say of the architects of that period:

“That the medieval architects were excellent workmen sometimes turns out to be only half a truth. They were great artists, and where the object was to create a thing of beauty they were quick in answering to the call. But when the matter was one of science rather than of art—when, for example, they had to consider not how a church would please the eye or excite the devotion of a worshiper, but how it would stand—their skill seems at times to have deserted them. They knew how to raise their columns and vault their aisles, so far they could be trusted to make no mistake, but in the matter of foundations there was no such certainty. They made them as secure as they could. In fairness it must be admitted that for long periods their confidence was justified. Recently, however, defects have come to light with alarming frequency. A cathedral is no longer a type of solidity. Its walls may be out of the perpendicular. Its towers may incline at an angle which suggests a speedy fall.”

Does any one doubt that Christopher Wren or Inigo Jones “bossed” the edifices that make their names famous?

Criticisms that endeavor to compare present-day conditions with those of a hundred or more years ago are neither fair nor are they valuable. The conditions confronting the architect of to-day are more complex in every way. He not only has to “rear his columns and vault his aisles,” but he must heat, ventilate and light his building. The sanitation is a problem only to be successfully undertaken by those trained in the work, and the completed building must stand as the conception of the architect—no one can rob him of that honor—nor can any censure him if he insists that his assistants associated with him in the construction perform their allotted tasks without impairing the lines and form of the edifice.

Every one familiar with the situation knows that in the relationship between architect and client, when the client “bosses the job” the result is unsatisfactory.

An architect is known by his completed work. If he has “arrived” and can insist upon his ideas being carried

out, well and good; but if from business considerations he must insure the good will and future favor of his client by conceding that which he does not approve of, he has ceased to dominate the work, and, while he must be its sponsor, he suffers by criticism of those who, being unfamiliar with the governing conditions, are unqualified to pass judgment on the architect's real ability.

Speaking of color effects in building, this writer scolds the modern architect in these words:

“He may know nothing about color, and probably does not, but he never lets a hint of his ignorance escape him. Color of all sorts, painted decorations, frescoes and what not are applied by the architect under his immediate personal supervision. The result is very obvious. Color as color, color as an aid to building, color as a sister art of architecture, color as a rational and beautiful embellishment, has long since disappeared from architecture. . . . but the distinguishing conceit of the architect in taking upon himself functions he does not understand and work he cannot perform is in many cases the real determining factor in this debasement of a noble art.”

Let the writer sit down with an architect and his client and listen to the conversations that take place from the first visit, when the preliminaries are arranged, to the last, when the “extras” are discussed. He will then know how return based on investment is the most important feature to the client, and how little “color” or any decorative feature appeals to him.

Clients who figure on costs, especially in commercial buildings, and who finely balance the income against it, are not in this country disposed to spend much money on “color.” Its æsthetic value doesn't appeal to them, although, in spite of this writer, it does to the architect.

This critic evidently has not closely followed the campaign of education that is in progress in America, seeking to educate the masses to higher ideals of art. This campaign had its initiative among architects, who early realized that the only way to work out the problems of form and color that appealed to them was to educate the client to a higher plane of artistic appreciation. Much has been accomplished and the future will no doubt bring better results, but until the day arrives when the utilitarian and the artistic go forward hand in hand, the real efforts of the architect toward a more artistic construction will not receive the appreciation to which they are entitled.

Examples of color like the Royal Insurance Building in this city, the new Hearst Building in San Francisco, and the Rodef Sholem Synagogue at Pittsburgh, are not as common as we could wish, although between this coast and the Pacific there are to-day many beautiful buildings where color has been judiciously and artistically applied on the exterior.

Color is but a relative term and when applied takes its character from its surroundings. It is more suggestive than defined, and we may see color in the marble figure or the carved column.

Does any one with even the slightest artistic perception suppose that Mr. Morgan's beautiful art gallery in this city would have been improved by the addition of color? And is it not equally true that viewed either in brilliant sunlight or on a diffused day it suggests “color” in the highest sense?

The application of color by use of modern glazed terra cotta, which never softens or mellows, is, as every archi-

tect knows, a serious problem. One can readily imagine the effect produced in a community by its injudicious use.

We have not in any way endeavored to defend the modern architect, he can take care of himself, but we deplore the fact that in a paper aiming to lead the judgment of the owners of American homes it should so libel a profession that is giving, and so unselfishly, its best efforts towards a betterment of our surroundings, not only in the country home, but in the largest civic centers as well.

Recent Court Decisions

CHANGE IN BUILDING CONTRACT.

SCANLON & NORTHWOOD, MICHIGAN SUPREME COURT.
110 *Northwestern Reporter*, 493.

Plaintiff contracted to do the mason work, lathing and plastering of a house for the defendant for \$500. While the work was in progress and after he had received \$270, plaintiff refused to go on with the work under his contract and the parties executed another agreement whereby the defendant agreed to pay plaintiff "such sum of money after the contract price is exhausted" as would insure to himself after paying all his help the usual day wages paid to others for similar work. The court gave judgment for the plaintiff, holding that there was a sufficient consideration for the defendant's agreement.

PREVENTION OF PERFORMANCE OF CONTRACT.

SPAFFORD V. M'NALLY, WISCONSIN SUPREME COURT.
110 *Northwestern Reporter*, 387.

In this case the plaintiff, a mason, sued to foreclose a mechanic's lien for the brick work and plaster work done in the construction of a dwelling house for the defendant.

When he had performed all of the work except the putting on of the third coat of hard finish plaster he was prevented from completing performance by the owner. The court held that he was entitled to recover the contract price, less whatever it would have cost him to complete the job.

EMPLOYMENT OF FIRM OR INDIVIDUAL ARCHITECT.

LASHER V. COLTON, ILLINOIS SUPREME COURT.

80 *Northeastern Reporter*, 122.

Action by A. M. F. Colton, for services as an architect in the erection of a house for defendant. While the case was pending the plaintiff died and his son, Samuel K. Colton, as his administrator, was substituted. The main defense was that the action was brought in the name of the father alone, while a partnership existed between him and his son, S. K. Colton, and the work was done by the firm of A. M. F. Colton & Son.

The court held that testimony showing that plaintiff and his son occupied the same offices as architects and that the name appeared on the door as A. M. F. Colton & Son; that the defendant talked with both father and son as to the contract before he made the arrangement; that some letters between the parties during the progress of the work were signed by and addressed to A. M. F. Colton & Son did not constitute sufficient evidence to submit to the jury on the question of partnership, especially as it did not appear that the defendant could be in any way injured thereby. It also appeared that building contracts, signed by the defendant, with the various contractors each contained the statement that the work was to be done under the direction and supervision of A. M. F. Colton as architect. Judgment was accordingly given for the plaintiff.

ILLUSTRATIONS

RODEF SHOLEM SYNAGOGUE, PITTSBURG, PA., MESSRS PALMER & HORNBOSTEL, ARCHITECTS.

Above grade, the exterior of this very interesting building is constructed entirely of light buff-colored, impervious, Kittanning brick, and straw-colored terra-cotta.

The dome, groined in type, has a clear span of 92 feet. The construction is supported at the bulkhead piers at the corners of the building, at which points the entire roof load is practically concentrated. This dome, of double shell construction, is entirely composed of Guastavino tile. In the sections shown in our illustrations it will be noted that a steel construction is indicated. This however was not followed in the final work, the Guastavino construction taking the place, in a most safe and satisfactory manner, of the steel work as originally proposed.

The upper or exposed shell of the dome is covered with green glazed terra-cotta tiles.

In the wing back of the main auditorium, as shown on the plan, is located the Sunday School. This wing also contains an assembly room, class room, club room, a library and the minister's study.

In the interior finish, the dome ceiling is plastered directly on the Guastavino tiles. In the main auditorium a wainscot twenty feet high, constructed of oak, runs entirely around the walls.

At the rear of the auditorium is the arc, and at the front or street side there is a gallery. The main auditorium floor has seating accommodation for eleven hundred, while the gallery provides seating capacity for three hundred and fifty more. This seating is of the individual theatre type, each rack of seats terminating at the aisle with a pew end or post.

The interior effect during daylight is particularly good. The

large stained-glass dome ceiling light, and well executed stained-glass windows, typical in character, produce an interesting and most artistic effect. This glass was all designed and executed by Mr. Schladermudt.

The interior finish of the Sunday School is yellow pine throughout, finished in varnish.

The building is mechanically ventilated and heated by direct steam system.

The introduction of color effects in the exterior of buildings is not, in this country, receiving the attention it is in Europe. It is therefore worthy of special mention when the application of color has been so artistically accomplished as to present an attractive and harmonious effect. The entrance feature and the frieze that encircles the building, executed by the Atlantic Terra-Cotta Co., may be regarded as one of the most successful attempts in this direction that has been accomplished in this country. It is to be hoped that this successful solution of so difficult a problem may induce architects to enliven the façades of buildings by the introduction of color.

It is not possible to produce in a photograph all the richness of color that has been obtained by the introduction of this polychromatic terra-cotta as shown in the illustrations of the entrance detail and frieze. These present on completion all the softening and mellowing of color that is usually only to be found when nature has blended it after long exposure to the weather.

The entire building, with its green dome, buff brick, the polychromatic effect of the terra-cotta, presents an effect highly creditable to the architect and a delightfully restful spot in what would otherwise be a monotonous and uninteresting thoroughfare.

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The Amended Programme for the New York State Prison Plant—The Rights of Exhibitors in Public Exhibitions—Mural Painting an Essential Part of Architecture.	

ARCHITECTS competing for the commission to design the buildings for the new prison plant in this State have doubtless been to a certain degree disappointed in the addenda to the original programme of competition which the Commission on New Prisons has recently issued. There was a more or less well founded rumor to the effect that the Commission had reconsidered some of the severe and worse than useless conditions of the original programme, and acting upon the advice of the State architect and the suggestions of various protesting bodies of architects in the State had modified the requirements.

WHETHER there was a disposition on the part of the Commission to correct or temper the grossly unreasonable conditions of the programme, or whether the slight changes contained in the addenda represent all the modifications at any time contemplated is not now material. Certain it is that the programme remains, with the exception of the time for concluding the competition which has been extended nineteen days, practically as objectionable as in its original form, and the

Commission has thus emphatically signified its unwillingness to accept suggestions from any source. That it is possible under the law for the Commission, as appears in this case, to so devise and conduct an architectural competition for the designs of a large and important State institution, as to render it unattractive to the best talent in the profession, can scarcely be considered otherwise than unfortunate for the State.

IF the rights of exhibitors in the various public exhibitions devoted to architecture, painting and sculpture could be definitely determined, and once agreed upon thereafter respected, one of the most fruitful sources of discord among members of these callings would be removed and doubtless the benefits accruing from exhibitions much enhanced. The latest case of an aggrieved exhibitor brought to our notice is that of an architect who submitted an example of his work to the committee on selection for the recent Architectural League Exhibition. The subject is reported to have been accepted without comment and when a little later the author attended the exhibition, he was considerably surprised and annoyed to find that the water-color perspective furnished by him had been removed from the frame and what he considered a very rough, cheap, inartistic gilt mat added in an apparent effort on the part of some one to supply what it was considered the author lacked in artistic ability as evidenced by the setting provided. The exhibitor maintains that he would have been most unwilling to have shown his work in the setting forced upon it, and the committee's action in so showing it without authority, unquestionably injured him in the opinion of those competent to judge.

CONTINUING, the exhibitor submits that there were three proper courses open to the committee, one of which should have been followed in the case of any possible exhibit tendered. First, an exhibit could be accepted in the form provided by the author; second, the author could be notified that with certain modifications the subject would be acceptable, leaving the decision as to whether these modifications were preferable to a rejection entirely with the exhibitor; third, the proposed exhibit could be rejected outright as not being properly framed or presented. But to attempt to dress up or improve an exhibit without the knowledge or consent of the exhibitor is characterized as an unwarranted invasion of the author's rights.

THE prominence given to mural paintings in the recent Architectural League exhibition in New York is an illustration of the general feeling which seems to be gaining strength in this country that mural paintings form an essential part of architecture. America is rich in historic traditional and picturesque incidents and these can in no way be placed before the public more effectively than by means of mural paintings which ordinarily possess the quality of appropriateness and being painted to fit a certain space or room become in effect a part of it. Not only have mural paintings contributed much to the cause of education, but they have also contributed to, we might almost say, constituted the chief architectural and artistic charm of more than a few of our public buildings.

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AND

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No. 1683.



The Municipal Building, Washington, D. C.

THE home—the first real home, for all other buildings occupied by it have been but rented quarters—of the Government of the District of Columbia is nearing completion. It is known in Washington as the Municipal Building and is a beautiful monumental structure of specially selected creamy white South Dover marble above the base, the base being of a warm gray granite from Blue Hill, Maine.

Everything that went into the construction of this dignified building is of the highest obtainable grade, both as to materials and workmanship, and while, as the illustrations show, it is a decidedly ornate building, not a single feature that counts for comfort, strength or utility has been sacrificed. When it is understood that from the plus 8 level, where the contractor for the foundations left off, the completed building, ready for occupancy, cost but \$1,750,000, including architects' fees and cost of supervision by Government officials, it will be seen that it is a marvel in the days of high-priced labor and material.

Congress in 1902 authorized the purchase of a site and the construction of this building for the Government of the District of Columbia and created a building commission composed of the Secretary of the Treasury, then Leslie M. Shaw, and the three Commissioners of the

District of Columbia, then Henry B. F. Macfarland, Henry L. West and John Biddle, and directed that the construction be supervised by an officer of the Government, to be appointed by the President. President Roosevelt appointed Major Chester Harding, Corps of Engineers, U. S. A., now in charge of the design and construction of the Gatun locks of the Panama Canal, as Supervisor of Construction, and Major Harding, with the assistance of Mr. C. A. McKenney, C. E., managed the engineering features and supervised the construction of the building. During July of 1907 Major Harding was relieved by Captain William Kelly, Corps of Engineers, U. S. A.

Immediately after the passage of the bill authorizing the building, the Commission, with the assistance of the Supervisor of Construction, and Messrs. D. H. Burnham, of Chicago; R. S. Peabody, of Boston; George B. Post, of New York, and Mr. J. Knox Taylor, of the Treasury, began the work of selecting a design from among several which were submitted in competition by prominent architects of the country. The successful one was the creation of Cope and Stewardson, of Philadelphia. This design contemplated the use of a creamy white marble superstructure and warm gray granite base, in which, as previously noted, it is executed.

The total amount appropriated for this building, including the site, was \$2,500,000. Of this \$550,000 was paid for the site, which, while ideally located, proved very expensive owing to the character of the foundation which it was found necessary to put in. These founda-

twelve inches at the butt, when sawed off at the required elevation. This latter requirement was by no means easy of fulfillment and great care had therefore to be exercised in selecting piles of sufficient diameter at the butt to insure the specified size at the cut-off.



GROUP OVER MAIN ENTRANCE.

tions cost \$189,000, exclusive of design and supervision, and contain 15,806 barrels of Portland cement used in making 15,000 cubic yards of broken stone concrete and laying 191,000 brick; 63,960 square yards of waterproofing, and 3,600 piles, nearly all of them capable of sustaining a load of twenty-five tons without settlement.

The site of the building was formerly occupied by a cable-car power-house which had been burned down to its foundations. As the plans of the power-house were destroyed with it, the removal of the old foundations proved no easy task, as the material to be removed changed character frequently and suddenly. It might be of interest to state at this point that quite a large wall of broken brick concrete was unearthed and that it was among the most compact and hardest of destruction of any concrete work that the writer has ever seen.

The total amount of material excavated, including earth, concrete, brick and rubble masonry, and blue muck, was approximately 50,000 cubic yards. Water was encountered a few feet below the sidewalk level, necessitating the sinking of two sumps which drained the area and were in turn drained by two centrifugal pumps. At about the minus 14.50 level blue muck was encountered, in which it was necessary to use piling fifty feet in length. The specifications provided that the penetration of a pile at the last blow of a 2,000-pound hammer falling twenty feet should not exceed one-half inch. A number of tests were made with a static load of twenty-five tons and in no case did the settlement exceed one-quarter inch in twenty-four hours, during sixteen hours of which time the surrounding ground was being constantly vibrated by a number of pile drivers in operation.

The piling used was Virginia pine, none of which were less than eight inches at the top or point, nor less than

A peculiar sight witnessed during the placing of the concrete was that two entirely different systems of handling, mixing and placing were used side by side, the one being a most elaborate mechanical mixing plant, with material elevators of the continuous chain bucket type, automatic measuring devices, etc., and for distributing and placing the concrete, two cableways mounted on substantially built railways running at right angles to the cables, enabling the bottom dumping buckets (into which the mixers dumped directly and which were carried between the cable hoists and mixers by an industrial railway paralleling one of the cableway tracks), to be carried directly over the form to be filled; the other, the so-called primitive "hand-mixing" method, the aggregate being delivered to the mixing boards, and after being mixed, to the concrete forms, by means of wheelbarrows. Competent inspectors were ever present during the mixing of concrete, by both hand and machine, to insure a uniform product. In the hand-mixing process the sand and cement were thoroughly incorporated in a dry state, then the broken stone and water were added. The mass was then thoroughly mixed by the "cutting" method, not less than seven men being employed for each batch. Whenever it became necessary to reduce the output, because of the lack of forms, etc., the mechanical mixing and placing plants were invariably shut down, the contractor having satisfied himself that the other method was the most economical. Such results, of course, might not obtain on another work requiring a like amount of concrete but in different form.

As previously noted, 63,960 square yards of waterproofing were used. This waterproofing consists of eight layers of tarred felt and nine coats of coal tar pitch. The surface of the concrete to be waterproofed was first

made thoroughly dry, after which a coat of coal tar pitch was applied while almost at the boiling point. In this a layer of tarred felt was laid with lap seams, alternating the felt and pitch until eight layers of felt and nine coats of coal tar pitch had been applied. The result is a perfectly waterproofed foundation.

The building occupies the square bounded by E Street (where Pennsylvania Avenue intersects), 13½ Street, D and 14th Streets, Northwest, fronting 243 feet on E and D Streets and 193 feet on 13½ and 14th Streets, and is practically one hundred feet high from the Pennsylvania Avenue sidewalk elevation to the top of the parapet wall. The shape is rectangular to the second story, above which it is "U" shaped, the outer court facing on D Street. The inner court up to the first floor level is occupied by the engine and boiler rooms.

The Commission's invitation to competing architects called for a classic design in the manner of the English Renaissance and the building as erected may be well described architecturally under this head.

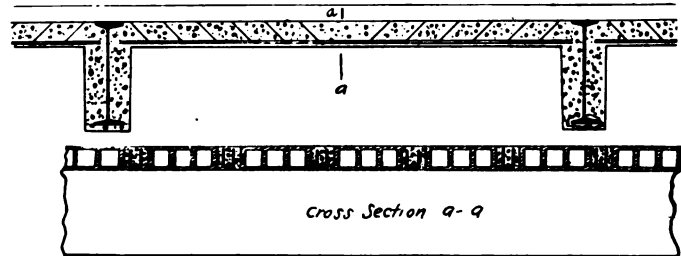
In exterior design the building may be defined as that of a high Corinthian order resting on a strongly rusticated base consisting of the first story and supporting an attic which is the fifth story of the building. The Corinthian order encloses the second, third and fourth stories. The columns in the bays are surmounted by marble statues, each nine feet and four inches in height, representing the Arts, Sciences, Agriculture, Commerce, Statesmanship, etc. There are twenty-eight of these figures in all, which, with the group over the main entrance, were modelled by Adolfo Nesti.

The particularly attractive principal entrance is at the center of the main front facing Pennsylvania Avenue. This entrance is surmounted by the beautiful group shown in the accompanying illustration. The figures represent Law and Justice.

The first floor is reached by a broad flight of steps to be flanked later by bronze statuary on the granite

the various stories. A wide corridor runs north and south to the wings traversing them southward to the rear. The offices open from this corridor on either side. Two sets of three elevators each are placed at this junction of the wing and main corridor. Entrances from 13½ and 14th Streets open directly into the basement at the north and south ends of the main corridor and close to the elevators.

The interior architecture is plain and simple throughout, as seems fitting for an office building such as this is, the only exceptions being the first story front corridor,



DETAIL OF FLOOR CONSTRUCTION.

the stairs, the Public Hall and the three Commissioners' suites.

The first story main corridor and stairs have been treated with marble and with the entrance vestibule on the Pennsylvania Avenue front, give a dignified approach to the offices. The marble used is from the "Kennesaw" and "Cherokee" quarries of Georgia, the light "Kennesaw" being used throughout the stairs. The ceiling of the corridor is supported by built-up Ionic columns bonding into the wainscoat, which is arranged to give the strong structural effect of plain ashlar work. In this a combination of the marbles is used. Reference to the first floor plan will show the arrangement and location of the columns.

The Public Hall in the front of the fifth story is of monumental character, having an elliptical vaulted ceil-



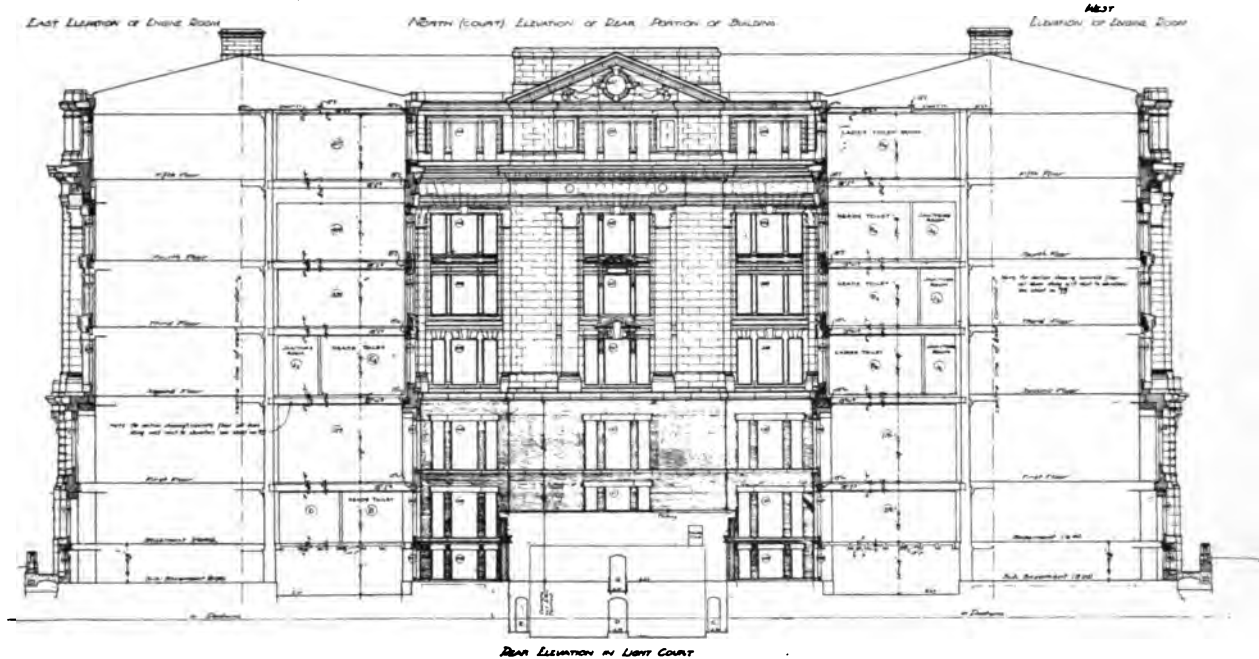
FIGURES SURMOUNTING COLUMNS IN BAYS.

pedestals which have been provided. The outer vestibule in highly carved white marble gives entrance by a triple doorway into the hallway proper. Facing this doorway the main stairway extends to the right and left up through

ing carried on fluted columns and pilasters with panelling between. The columns, pilasters and panels are in natural finish figured butternut. In this hall public receptions and hearings will be held, so that it is an apart-

ment differing materially from all others in the building, which are purely working offices. An opportunity is therefore offered to augment the architectural treatment of the hall by the addition of paintings of an historical

cotta arch end construction, and the front corridor and room floors a combination of reinforced concrete and terra cotta tile, as shown in the illustration. These floors were designed to carry a live load of seventy-five pounds



character. The details of this room and of one of the Commissioners' suites, shown herewith, give a very good idea of their treatment.

The amount of floor space originally required necessitated carrying the rooms of the upper stories all around an enclosed court, so as to form a hollow square. It was later determined that certain modifications could be made which permitted the court to be open towards the south above the first story, thereby admitting light and air to the rooms facing on the court, so that they are in all respects as desirable as rooms facing the outer line of the building.

The structure is almost entirely wall bearing, practically the only columns employed are those supporting the floors at the stairs and elevators, and the stairs themselves. All of these columns are of structural steel encased in concrete, and in some instances the concrete is faced with hollow terra cotta tile.

The walls are unusually massive, especially up to and including the first story, and are of hard burned red brick laid in Portland cement mortar, to which (above the basement story) was added ten per cent. of lime putty. All exterior walls are backed with hollow brick bonding with the ordinary brick. Wherever it has been found necessary to drill brick walls power drills were found to offer the only economical means of accomplishing results in a reasonable time.

The number of bricks used totals 6,757,050, made up of the following: Red, 6,196,900; hollow, 461,850; radius, 11,800; enameled, 12,000 and face 64,500.

Reinforced concrete beams are used over practically all rough brick openings that ordinarily would have been spanned by flat arches. This method effects a great saving and better structural results.

There are 1,262.5 tons of structural steel, exclusive of reinforcing bars, every pound of which is thoroughly fireproofed with concrete.

The plastering is all three coat work.

The side corridor floors are generally of 12-inch terra

per square foot in the rooms. As a test of one panel so designed, the span of which, from flange to flange, was 7.75 feet, was covered with sand to a depth of one inch to give a uniform load. The sand was then covered with planks, both together weighing fourteen pounds per square foot. On top of the planks were piled 112 bags of sand weighing 100 pounds each, making a total weight of 11,634 pounds, or approximately 375 pounds per square foot. The deflection with this load was less than one-quarter of an inch. This particular panel was selected for a test because it was thought to be the poorest one built. The result, as has been seen, was very satisfactory. Other panels of equal and greater span have been tested with much greater loads without any deflection.

For the purpose of determining the adhesion between the 4-inch by 4-inch concrete ribs and the 12-inch by 12-inch tile, four pieces of timber 11-inch square and two inches high were laid, one each, on four tiles outlining a square. A wooden platform was built on these four pieces of timber and loaded with 8,700 pounds of sand, or 2,175 pounds for each tile in addition to the weight of the platform. There was no apparent breaking of the bond between the concrete and tile, and upon removing the load the tiles were found to be uninjured.

The finished floors in all public spaces and toilets are in white terraza with Knoxville borders, and the public hall and three Commissioners' public rooms, white oak. In all other rooms, except boiler and engine rooms and laboratories, edge grain Georgia pine is used. The boiler room has a cast iron plate floor and the engine room and laboratories are laid with vitreous tile.

The roofs are of reinforced concrete carried on structural steel framing, waterproofed by the same method as the foundations and covered with flat, hard burned red tile and flashed throughout with heavy copper.

A feature of the building is its mechanical equipment. Four 150-horsepower water tube boilers and three horizontal, single cylinder, automatic cut-off high speed en-

gines direct connected to two 150-kilowatt and one 75-kilowatt continuous current generators furnish all necessary heat, light and power for the electric passenger and freight elevators, electric and steam house, sump and fire pumps, circulating pump for cold drinking water system, vacuum cleaning system, air compressors for pneumatic tube and thermostadt systems, fans for the ventilating and heating systems, etc.

The boilers are equipped with an automatically controlled mechanical draft system which permits of the use of the lowest grades of buckwheat anthracite coal.

A complete system of hot-blast heating and ventilating includes three fresh air inlets from the inner court of the building, three centrifugal fans, each delivering air tempered by passing through steam-heated coils, through underground tunnels to three distributing points in the sub-basement and three secondary heaters at each distributing point in the sub-basement and there secondary heaters at each distributing point. From the secondary heaters double ducts carry tempered and hot air to the mixing dampers, which are controlled either automatically or manually in the individual rooms. After entering the rooms near the ceiling line the air is exhausted

by disc fans in the attic through vent ducts beginning near the floor. The corridors and toilets are heated by direct radiation. All fans in this system are driven by variable speed electric motors of from twenty-five to thirty-five horsepower each.

The three and one-half inch pneumatic tube system installed in the building has thirty-five single stations; a central exchange, branch exchange and six direct lines connecting departments having a constant exchange of papers. The large diameter of these tubes permits the passage of a file of papers of considerable size. Every room contains a telephone.

A circulating drinking water system furnishes drinking water at two "Cherokee" Georgia marble fountains on each floor.

A vacuum cleaning system and two specially designed mail chutes completes the list of modern conveniences and makes this building one of the most complete and best equipped office buildings yet constructed by the Government—in fact, it would be difficult to find an office building anywhere that contains a more complete and modern equipment.

Half-timber Buildings

IN these days, when there is so much life and growth in the "arts and crafts" movement which turn the thought towards the achievements of the deft and steady fingers guided by native or trained artistic instincts, it is rather curious that more has not been done in this country to revive one of the most satisfying—artistically speaking—forms of architectural expression that has ever been developed—half-timber work. To a limited extent there has been a revival, but it has been inadequate, imperfect, crude. Those who have attempted it seem to have recognized that their attempts have been failures and have been content to abandon the field, leaving as record of their endeavors a melancholy series of unreal and paste-board buildings—fortunately widely scattered, here and there.

It is significant testimony to the perennial influence and power of the Goddess Fashion that, in spite of the fact that England was studded thickly with admirable examples of half-timber work—modest in cost as well as costly—that must have been familiar to every one—the American builders of the eighteenth century, those who first gave attention to architecture as an art, preferred to base their designs in the classic revival of the period rather than make use of an earlier form and style of construction—half-timber work—that must have been quite familiar to them. It is very doubtful whether there now exists—or ever did exist—in this country any example of half-timber work in its richer and more architectural development. Of the simpler form, we do recall a few examples in New England, though these had so little of timber showing and so wide stretches of plaster that they classed rather with the "stuccoed" buildings of a later period than as half-timber work proper. And this is rather curious, for while the builders did not seem to care for the outward expression of the style then, in parts of New England at least, took advantage of its structural advantages, thus the brick nogged north and east walls of

apparently modern houses of the eighteenth century are quite a common feature.

It was the writer's fortune to spend the early years of his married life in an old farm house that dated from the earliest years of the nineteenth century and was structurally based on a close following of the methods used in still older buildings in the town. The huge central chimney with its spacious open fireplaces, the adze-hewn ceiling-beams, the low rooms—only six feet eight inches in the clear—the infinitesimal and crooked staircase all made the house a delightful residence for vigorous humanity, but for enfeebled nature it was a terror, as the writer discovered when, just beginning to convalesce from a life-and-death struggle with one disease, he learned that his first-born was in the adjoining nursery waging a losing fight against lung fever. It was bitter weather and that nursery could not be heated. The half-convalescent father must do something, no matter at what risk. A moment's staggering brought him to the scene of trouble only to find the child carefully sheltered by high screens placed so as to concentrate on him all the heat that a good fire could produce, only to find the window cracks carefully stopped and pasted over with paper, only to find the bottom crack of each door properly closed with sand bags; yet to find that, in spite of all this, one could see one's breath on the outer side of the sheltering screens. Where did the bitter cold, nay more, the searching air current, come from? It only took the trained mind a moment, and then, sighting along the wall the mystery was solved; there where the great corner post of the house showed inside the room, there, stretching from floor to ceiling, were two great cracks each half an inch wide, through which one could see all outdoors! A few busy moments with mallet, calking-chisel, rags, paper, cotton-batting—anything that came handy—closed those ghastly evidences of one of the weak features of half-timber construction,

the temperature within began to rise and the child was saved.

It is the difficulty of making tight the joints, particularly the long vertical ones, that probably, has interfered



LIVING TOWER ON THE FORTIFIED WALL SURROUNDING PEGNITZ, GERMANY. BUILT IN 16TH CENTURY.

with the adoption of the half-timber style—the true style, that is—in this variable climate. In the damper countries on the other side of the ocean, particularly in the ever-moist English countryside, there is not so much difficulty as here in keeping the joints closed. Another cause lies in the fact that most of our American buildings are framed of soft wood—pine or spruce—which shrink largely in seasoning—while abroad—even now in England where timber is so scarce—it is oak that almost invariably is used for the framework of these structures. It is this difficulty of making joints satisfactorily tight that led some American architects, when, a score of years or so ago, they began to turn their thoughts to half-timber effects, to overcome the difficulty by plastering the outside from corner to corner with an unbroken sheet of plastering; this dried, they then converted it into half-timber work by frankly tacking on over the plastering seven-eighths inch boards of divers patterns and widths. Seen from a distance the effect, sometimes, was not bad; but a close view quickly revealed the work as the most despicable of shams.

The desire to overcome this trouble with the opening of joints, aided, perhaps, by a disposition to adopt the fashion of the American, caused certain English householders in the time of Queen Anne to reverse, as it were, the method as above practiced. In their case they concealed open joints and stopped off sneaking air-currents by the simple expedient of giving their old half-timbered buildings a complete veneering of a single thickness of brick work, the new face being treated in the Renaissance spirit

of the hour. These unsuspected really half timber structures—ennewed like an indiscreet nun—come to light now and then when an old house is torn down or has to be repaired. Perhaps it was a knowledge of this that gave rise in this country, in certain of the Northwestern States at least, to the practice of building what is there known as a “brick-veneer” house, which is simply the ordinary wooden frame house in which the clapboarding or siding has been replaced by a walling of brickwork, one course wide, tied to the woodwork by nailing into the joints from the inside. On this general method there have been many improvements devised.

Although there is a difficulty in making joints in half-timber work that will stand, it is not one that is insurmountable, and by judicious rebutting, by using double or vaulted walls, by using thoroughly seasoned or “treated” timber the difficulty, if not wholly overcome, is at least so minimized that the weather is kept out, and what is of almost equal importance, bees, wasps and insects and the tendrils of ivy and other vines, with their powerful leverage and inducement for decay, precluded from entering.

The technical difficulties in the way of the architect who would “do” half-timber work are great, though not insurmountable, but they are not the matters which concern us here as for the moment the matter of design engages our attention.

It should be remembered by designers that half-timber work is completely a constructive style or, rather, method, and where the design shows impossible, imperfect or undesirable construction the result is bound to be offensive; for a half-timber design properly conceived, exhibits first of all, the necessary skeleton, the actual constructive framework of the building, and nothing can be more unpleasant than to find main supporting members expressed with weakness or struts and braces running in a wrong direction or applied where no such braces are called for.

The English term “Post and Panel” work in itself discloses what half-timber work is in its simplest expression—the expression usually found in the picturesque cottages of Surry and the southern counties, mere wooden uprights and horizontal beams with panels of plastering filled in between. In these simple buildings the faces of beams and plastering are usually flush with one another,



LEAMINGTON, ENGLAND.

as it obviously must be the quickest and simplest way of building to finish the wall in this way and in such buildings as these cost and simplicity are of the first importance. But from this point of departure, this plane in reality, designers made many variations. They used more plaster and less wood, or *vice versa*, according to their

whim or need, and it should be noted that in the older examples more wood was used than in the later ones, when the failing forests compelled economizing. In some of these early cases where practically only uprights were used the frontal area of the woodwork seems quite to equal that of the plaster; but in later examples the plaster area gains and often vastly exceeds that of the wood. But, later again, when they found that by increasing the number of panels while decreasing the area of each they could utilize a lot of bits of short and crooked wood, otherwise unusable save for firewood, the area of the wood surfaces once more gained on the plastering. Hence it is not possible for one nowadays to argue that a half-timbered building to be just right must or must not exhibit a greatly preponderating surface of plastering—or brick work, for brick-filled panels are as admissible in the style as are panels of plastering. Whether one surface or the other should predominate is a matter of taste with the designer.

Besides varying from the early examples in the relative areas of wood and plaster, designers introduced variations in the degree to which the woodwork is made to advance in front of the plane of plastering. In a general way, while the likelihood of decay and the consequent necessity of repairs are increased by the boldness of the projection



SIXTEENTH CENTURY HOUSES IN BRICK NOGGING, DUDERSTADT.

of the woodwork, there is little doubt but that the design increases in dignity proportionally as the boldness of this advancement emphasizes the construction.

Perhaps modern designers have done more to wrong the style by the use of paint than in any other way. It is true that in the "magpie" architecture of Cheshire and the Western counties of England one finds violent contrasts of black and white; but even then the painted surface, especially when fresh, is not agreeable. One finds pleasanter effects where the oaken woodwork has been left to weather naturally. The same sort of agreeable effect we have noted in this country where the architect has been clever enough to finish his woodwork in only three sides of each piece, leaving the front side as nature fashioned it, only stripped of the bark. The really attractive thing to do would be to put the framing into the hands of an intelligent gang of ship-carpenters with instructions to them to get it out so as to take as much advantage as possible of natural growths and surfaces.

In another point American designers show a weakness. As a rule they are content to confine their efforts in half-timber work to the upper stories of their buildings, usually country houses of considerable size and having, as usually, either brick or stone lower stories.

It is at the line of juncture between the brick or stone lower story and the wood-and-plaster upper story that designers most signally fail, even when they avail themselves of the ordinary device of giving a considerable



FT. SHREWSBURY, ENGLAND.

over-hang to the upper story. Still more commonly failure follows when the faces of the two stories are flush and the junction is made by the introduction of horizontal members of wood. Even where these members have a mass that is satisfactory and does its duty properly in the general effect, mistake is made in passing too abruptly from the coarse forms that are consonant in association with stone or brick to those more refined members and mouldings so readily worked out in wood. Designers seem to pay too much regard to "merchantable sizes" in working out this portion of their designs and consequently one often sees main brackets, corbel-tables and particularly the corbels themselves far too thin. In a general way, it may be said that that treatment is most successful where the woodwork is, at points, carried down into the masonry work below; it seems to tie the upper and lower stories together in a more satisfactory way than does the commonly adopted plain horizontal line of demarcation. As a rule, American designers have been content to treat their half-timber work with simplicity, and comparatively little attempt has been made to treat the woodwork decoratively. But the time is obviously approaching when they will venture on those more elaborate treatments which



CHARTRES, FRANCE.

they have long been familiar with in photographs of the highly decorated half-timber buildings common in Germany and elsewhere, and when that time comes our Arts and Crafts friends will find ample occupation.

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IT is gratifying to learn that Superintendent Maxwell of the New York Public Schools, acting on the recommendation of Mr. C. B. J. Snyder, architect of the Board of Education, has caused certain rooms in something like a dozen school buildings in Greater New York to be closed, as a precautionary measure, until the facilities for exit from the closed portions of the buildings shall have been increased and improved. The buildings undergoing changes in this respect are without exception those erected long before the adoption of the type, plan, and character of buildings provided during the past decade, and that there are not more of these older buildings deficient in the matter of exits and other provisions for the safety of pupils in the event of fire is a source of real surprise.

EVIDENCES that the recent horror at Collingwood has caused an awakening throughout the country to the danger that menaces the school children in numberless ill-planned and faultily-constructed buildings, are abundant and of unmistakable character. Not only have numerous town and urban schools been closed by the authorities whose conscience was quickened by the Collingwood disaster, but the amount of thought and attention which is now being bestowed upon the question of how the lives of the little ones can best be safeguarded against any possible danger of a fate similar to the one which overtook the children of that stricken community, must certainly result in notable improvements in both

the means of protection provided and the general planning of school buildings. The daily press reflecting this thought contains a multitude of suggestions, from a variety of contributors, some commendable, some quite the opposite, but all bearing unmistakable evidences of the intense earnestness and concern of their authors.

THE past fortnight has been productive of much evidence tending to establish the fact of an almost complete recovery in the real estate market of New York. There are even those who profess to believe that the recovery is too rapid to be stable, and that the record of the past two weeks should be considered rather alarming than otherwise. Be this as it may, after a period of some months during which practically the only transfers recorded were those made by persons more or less embarrassed financially, it would seem as though much encouragement might be derived from the reported sales of large vacant plots for improvement. Apparently the speculator has recovered sufficient confidence to again enter the field, and although the improvements made by him are often not of the highest class, the element which he represents is probably one of the most potent and essential in making up what is commonly termed real estate and building activity.

AT a recent hearing given by the Committee on "Limits which can be covered to a height equal to once and Commission in New York, the consensus of opinion expressed seemed to favor the adoption of proper regulations limiting both the height of buildings and the proportion of lot area which might be covered by any structure. In the minds of those present the enactment of such regulations would go far toward solving the problems of street congestion and how best to secure needed light and air in connection with the lofty buildings of the financial district. But while the broad proposition seemed to find favor, there were widely differing views expressed as to what would constitute "proper regulations." It might be observed, however, that with the notable exception of one carefully developed and clearly presented scheme by Mr. Ernest Flagg, the suggestions made were for the most part of a somewhat nebulous character, their authors apparently belonging to the more-willing-than-expert class.

MR. FLAGG'S plan, that of no limitation on the area which can be covered to a height equal to once and a half the width of the street, but in no case to a greater height than one hundred feet; and no limitation to the additional height to which buildings or parts of buildings can be carried covering an area equal to one-quarter of the area of the plot on which they are built; with the added conditions that the higher building or parts of buildings must be erected a distance from the building line equal to the combined width of the sidewalk and roadway of the street on which the building faces; and shall contain no wood either for the building or its equipment above the first mentioned limit of height, would seem to offer rather more advantages than any other yet proposed and deserves very careful consideration.

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SOUTH FAÇADE FROM GARDEN, "FAIRACRES," JENKINTOWN, PA.

The Planning of Country Houses

By WILSON EYRE

IN this article we will eliminate the very small country house, as this type of house belongs rather to the suburban or the bungalow class—it is usually built on a small piece of ground and has little or no scope for considerations such as apply to a real country house.

We will, therefore, begin with the house of moderate size, situated on a piece of ground comprising several acres. The first step to be considered is the situation and orientation; the latter should be the chief consideration, the outlook and views should be secondary unless very unusual conditions exist regarding the outlook—a mistake in placing the various rooms toward the proper points of the compass will undoubtedly destroy the living comfort of the house; the house should have its greatest exposure to the south, and a plan with wings on either end and pointing to the north will result in the greatest amount of sun and air, giving the most exposed part of the house the south, east and west outlook, at the same time giving a court effect on the entrance drive; the wings will serve to protect the north exposure of the house.

The entrance vestibule and as much as possible of the service portion of the house should be to the north, thus

giving the living part the better exposures and the privacy of the garden. The dining room and kitchen quarter should be to the east, because the morning sun is most desirable at breakfast, especially in autumn and winter, and in the summer it is not objectionable, being the coolest part of the day. This places the dining room on the shady side of the house in the later afternoon and thus avoids the sun at the dinner or supper hour, when it is hotter and being low slants into the room and becomes an annoyance. Another advantage of this arrangement is the fact that it throws the living rooms to the south and west sides, which are the best exposures for both winter and summer; also it places the kitchen apartments where they belong. These should not be placed to the southwest, because the prevailing winds are from this direction in most parts of the country, and they drive the odors of cooking through the house.

A living hall, with the stairway leading from it, is a picturesque feature, but not very practical, because the stairway, unless much enclosed, is a source of draughts and makes a traffic way of your living place. If your means are limited and you cannot afford a large stairway

hall, it is far better to have a small one and make a large comfortable living room. If the living room is a library as well, there should be a small parlor or reception room, but the better arrangement (in my judgment) is to have a small study for writing and books, and keep the large room for general use. In the country one does not usually have formal guests or need a reception room.

The service quarters should be ample and should consist of the pantry, kitchen, servants' dining room or living room, a cold room or pantry, with a built-in refrigerator. This pantry should be so situated that it can be supplied with ice from the outside and conveniently near to the tradesmen's approach.

There should be a large coat closet on the first floor; also a small wash room.

The bedroom plan should be so arranged that the owners' quarters are somewhat separated from the guests' quarters. They should, of course, have their own bathrooms, and if the appropriation for the house warrants it, it is well to have a bathroom for each room—at any rate, not more than two rooms should be dependent on one bath; the first expense is more than counterbalanced by the saving in services in the chambermaid's department.

A large linen closet, with light and air, is a necessity; in addition to this it is well to have a slop closet and a broom closet. In every closet that has no window there should be an automatic burner which lights with the opening of the closet door.

House telephones connecting the various rooms with the servants' quarters on the ground floor are a great convenience.

The servants' sleeping quarters are most convenient when placed in a wing of their own, or at any rate, separated from the main body of the house, closed off by doors and reached only by the back stairs. Each servant should have a separate sleeping room—about eight by ten feet is sufficient if cost is a consideration; putting two or three servants together is not advisable. There should be a bathroom for these servants' quarters.

The kitchen chimney should be placed on the outside wall whenever possible; if it is unavoidable to place it in some central location, the kitchen and laundry flues should be insulated, otherwise these flues will make the servants' bedrooms almost unbearable in the hot weather.

In the next number I will take up the question of large country houses.

Eastern Long Island—Its Architecture and Art Settlements

By CHARLES DeKAY

LONG ISLAND'S eastern end has waited long for that kind of recognition which consists in the building of small frame dwellings by the square mile, far enough apart to permit of a kitchen garden and some flowering plants, yet near enough to hear everything that is going on next door—north, south, east and west. It still waits for that recognition which creates communities like Asbury Park and Belmar and Atlantic City with their depressing monotony of scroll-saw villas and board walks—and long may it wait!

Nature lovers and artists, however, discovered its charms more than three decades ago. Artist colonies rose on the Shinnecock Hills, at Amagansett and East Hampton, round Georgica Lake and along the northern rim of Peconic Bay, colonies which were so far from demanding modern improvements like express trains, trolleys and summer hotels, that the members gladly broiled and swallowed dust in painful village coaches on country roads, hugging themselves with the reflection that farms were not being cut up into building lots, dunes leveled for "board walks," and pretentious hotels placed where they would do most harm to the shorescape. But then artists never have had any decent respect for the pockets of real estate men and architects, even of such as buy pictures!

The giant city a hundred miles to the westward having burst its bonds of rivers and estuaries, thrown stupendous bridges over and burrowed tunnels under them, dismay has invaded the artistic camps; for they see the writing on the wall. How long will Montauk preserve its savage loneliness and grandeur? East Hampton its noble village street? The north woods their shady, sandy solitudes? Sag Harbor its air of an old whaling port?

Suffolk County—as a mere county—groans over scanty and slow trains, but the exuberant life that makes Manhattan the centre for business and pleasure will not brook

control and the sleepy old farms with their weatherbeaten barns and outhouses will have to go. The only thing that can be done is to persuade the local authorities and architects and prospective builders to manage so that the new order of things shall not kill the goose with the golden eggs by doing outrage to the natural beauty of the region; if railways and trolleys are introduced, that they shall conform to the lay of the land, and while affording glimpses of ocean, bays and lakes to give enjoyment to the



BOYHOOD HOME OF JOHN HOWARD PAYNE, AUTHOR OF "HOME, SWEET HOME," EASTHAMPTON.

tourist, shall not cut gashes and draw ugly straight lines on the few hills of the island; when public and private buildings are erected, that these shall not interfere with the view or spoil the landscape; that all new dwellings and shops in closely settled neighborhoods or thickly planted about with trees shall be fireproof and resist rather than aid the conflagrations which must be expected to increase with close settlement and a larger winter as well as summer population.

East Hampton and Sag Harbor settlers used to find it convenient to pasture cattle and horses on the Montauk end of the island, which could be fenced off where the Sound, the swamp and the ocean narrow the land. More

house, owned by Thomas L. Manson, Esq., and the ancient cottage where the actor Payne found his "home, sweet home," were spared. The broad street retains its ancient quiet beauty. A venerable lady who visited East



HOUSE OF JAMES L. BREESE, ESQ., SOUTHAMPTON, MESSRS. M'KIM, MEAD & WHITE, ARCHITECTS.

than two decades ago the wildness and magnificent views of the Point induced the building of several scattered villas not far from the lighthouse and an inn has been established halfway between that modern settlement and the terminus of the railway. Hither come lovers of the grand in scenery and hither also fishermen who sally out from the little bay on the north side to haul in bluefish, mackerel and sea bass. It is not only a comfortable but a comely inn. Standing on the veranda it is hard to realize that in the course of time the hundred and twenty miles of island between us and the East River must, and perhaps in the near future will, become a continuous chain of towns, villages and country seats. Now it is the haunt of foxes and eagles, wild geese and seahawks in their several seasons, not to speak of the great white day-owl of the Arctics, which pays its visits in winter.

Amagansett, where they still pursue the whale as a side issue to the fisheries, has its suburb toward the sea for city folk with many recent cottages, while Sag Harbor has had few late additions to the country seats erected long ago in its vicinity by summer residents. Lately a colonial house has been remodeled by Mrs. Russell Sage for a beneficent purpose. There are few changes in the old whaling town hidden away from "northerners" and easterly storms behind Shelter and Gardiner's Island.

All this part of eastern Long Island is a complex of peninsulas, islands and intersecting channels, bays and lakes, wonderfully well suited to country places having frontage on the water.

East Hampton, called Maidstone up to 1664 by the original settlers, has shown of late years a livelier tendency to expand than even Southampton; but fortunately this expansion has been effected without detriment to the looks of the village street. At one point a fire which swept away the postoffice and some shops destroyed at the same time a number of the trees which form the main beauty of East Hampton. The old Gardiner houses, the de Rose

Hampton some years ago for the second time, told the writer that her first visit was late in the forties, that she always remembered the charm of the place, and this had not diminished during the six decades between. Two or three windmills on or near the thoroughfare are by no means unimportant parts of the scene.

John Howard Payne's father was a teacher in the East Hampton Academy, now the Town Hall, and the "Old Home," shown in the illustration, looks across the village green at that former home of learning, past a stately liberty pole erected on the two hundred and fiftieth anni-



COTTAGE IN ART VILLAGE, SOUTHAMPTON.

versary of the foundation of the settlement. For many years the Academy formed the life of the village and many are the people famous in Congress and the pulpit who received their education there. One of the singular village characters of that period was an Englishman named Candee, a teacher who possessed all the traditional obstinacy of the Briton. A pet idiosyncrasy of his was never to turn out of the way for another vehicle when he was driving. Having a masterful way with him, encouraged doubtless by years of wielding the rod, and a notable flow of strong language at command, he used to come in conflict with the farmers, who learned to enjoy

going to sleep on top of their hay wagons in order to see whether Old Candee would or would not turn aside for a heavy load of salt hay. The old inhabitants have a fund of funny stories regarding this man; he seemed to have

Georgica is a romantic body of water shaped somewhat like a left hand with palm upward, a long thumb running eastward in the direction of East Hampton. The sandy tract that keeps the ocean from the lake for the better



VIEW IN VILLAGE OF EASTHAMPTON.

stepped out of a novel by Dickens. Candee's farm, two miles to the westward of the village, is now in the hands of many owners, most of whom have built villas and bungalows between Lake Georgica and the sea.

The wainscoting of the parlor and dining-room of the Howard Payne cottage is a joy to lovers of colonial architecture. Its present owner is said to feel the importance of keeping this old cottage in its original condition, so that for the present at any rate it will be cared for and preserved.

Southeast of the village on the heights which end abruptly in seaward-looking sand slopes, the Norman villa



COTTAGE IN ART VILLAGE, SOUTHAMPTON.

of Dr. Clarence C. Rice dominates the valley with its red roofs. It is after designs by Grosvenor Atterbury. From this upland a beautiful view lies spread out before one, with Hook Pond gleaming silvery between the range of dunes, on the one side, which separate it from the ocean, and the heavy mass of foliage that marks the village street on the other. Far out of sight and away to the west is another of Mr. Atterbury's attractive creations, the villa of the two painters, Mr. and Mrs. Albert Herter, which looks southward toward the ocean down the longest axis of Georgica Lake.

part of the year is so low that when one looks that way from the Herter house the lake seems to be an inlet with nothing to hinder one from sailing out to sea. The house occupies a low promontory between two of the "fingers" of Georgica and is approached from the lakeside by a terrace reached by flights of stairs. It is Italian in general aspect, has bronze roofing tiles and an open loggia over the stables. Two studios are arranged in the eastern wing. The Rice and Herter villas have two of the finest views in Suffolk County.

Many are the recent summer homes of East Hampton. Among them we may note Mr. Cockcroft's villa, out Georgica way, designed by Albro and Lindeberg, with its peculiar shingle roof, the shingles curving over the eaves, with its piazza a wing by itself, having bedrooms above, its pergola and its lattices of a soft green tint for the support of rose vines. The Rice and Cockcroft houses have large living rooms on the ground floor with dining-rooms adjacent on a slightly higher level, affording convenient arrangements for musical or theatrical entertainments and showing the instinct for hospitality in their owners as expressed by the original plans.

East Hampton dates from about 1650 and seems to have been peopled, at first at least, by Massachusetts and Connecticut settlers who discovered that the Pilgrim and the Puritan groaned under the tyranny of pastors and bigots. That they could not long escape appears from a petition to Governor Dongan in 1683 on the part of an East Hamptonian, who had to pay £9. 3|3 because he drove home a strayed ox on Sunday. It is true that he was accused also of kicking his wife, but this he attributes to the desire of his enemies to extract £20 from him on a side issue. Later come petitions from taxpayers of four years' standing, who declare that the first settlers refuse to allot them lands. Capt. Josiah Hobart, High Sheriff of

the County of Suffolk, is ordered to see that the Surveyor lay out for each of the complainants thirty acres of arable land that is not yet fenced or entered and appropriated by any person. Some of these petitioners are still represented among the citizens.

As early as 1657 one Goodwife Garlick was sent over to Connecticut "to be delivered upon unto the authorities there for the trial of the cause of Witchcraft, which she is suspected for."

At first the English immigrants preferred the Dutch settlements to their own, as Father Jogues noticed in 1646. "The English, however, come very near to them, preferring to hold lands under the Dutch, who ask nothing from them, rather than to be dependent on the English Lords." But as the English increased in number and Holland did nothing to enlarge her emigration the tide turned and by 1657 East Hampton was following Southampton in turning to Connecticut.

Artists and clergymen have found out East Hampton these many years lang syne, just as naval and military folk first explored and summer-settled Amagansett. Mr. Thomas Moran has a studio dwelling overlooking the village pond, opposite the cemetery and windmill. Messrs. Wm. J. Whittemore and St. John Harper live "deown Amagansett way." Down Egypt Lane Mr. Ruger Donoho inhabits a roomy, rambling cottage, a place famous for its flower garden. Bishop Greer, the Rev. Dr. John R. Paxton and Dr. Heber Newton choose the neighborhood of the dunes and the shores of Georgica.

East Hampton's post-office which burned last year has been replaced by a much more ornate building designed by Mr. Joseph Greenleaf Thorp, an architect who has erected over thirty villas and cottages for summer residents in and about the village. For the first time the old street sees marble. Keystones, lintels, sills and bands are white marble relieved against "Harvard" brick. The porticos are of wood, painted white. The building of this and the adjacent East Hampton Bank will tend to keep the business part of the village anchored in the old place instead of tending northward toward the railway station, as it bade fair to do.

These Long Island towns and villages will in the end have to come to the point of forbidding any further build-

ing of frame shops, banks, barns, garages and hotels on main streets or elsewhere in the too close vicinity of other buildings. At present when a fire occurs it is merely a piece of good luck that the wind does not carry the fire from house to house, shop to shop, and throw entire rows of cottages to the ground like a stack of cards. Land has become so costly in all favorable spots of Long Island that people cannot afford to keep their neighbors at a distance. Buildings must be erected side by side in rows. The only escape from the dilemma is a law forbidding burnable structures. Luckily the destruction of our forests has made wood so dear and the demand for concrete

has kept down the cost of Portland cement to such a reasonable figure, that simple structures can be built absolutely fireproof as cheaply as they can of wood, and cheaper than they can be of brick and wooden floors and roof. Some small buildings for shops in East Hampton have been raised of concrete blocks so far as walls are concerned, but as these are neither ornaments to the village nor completely fireproof inside, they have not helped the cause of safety from fire by encouraging others to imitate them.

East Hampton by no means monopolizes the old-fashioned windmills, whose vanes form the most conspicuous object on the coat-of-arms of New York. Bridgehampton, Watermills and other places retain these picturesque structures, once hailed as a relief to the hard labor at hand mill and grinding stone, over which the settlers in the seventeenth century had to slave. They are found as far east as Block Island and Rhode Island, still blithely defying Don Quixote with the measured sweep of their sails and shadows, as they

grind corn for farm animals rather than for men.

Southampton has many large and imposing villas, among which the residence of James L. Breese, Esq., designed by McKim, Mead & White, is conspicuous for a handsome use of the colonial style. On Shinnecock Hills the art village has bungalows and cottages worthy of note, not to speak of the much bigger country houses nearby which have been figured and described before in these columns. Hidden away from the railroad is a windmill that gives a charming touch to the beauty of the Hills, as one looks at them from the narrow strip of dunes that hedge the bay from the ocean.



"HERCULES," FORMERLY THE FIGUREHEAD OF THE U.S.S. "OHIO,"
NOW SET UP AT CANOE PLACE.

At Canoe Place, the old portage of the Indians between Peconic and Shinnecock Bays, where now there is a small canal spanned by railroad and carriage bridges, lies a hostelry famous for its suppers of eels and scallops. Here the figurehead of the Hercules frigate has been established like an idol of ancient heathendom. It stands on a pedestal opposite the inn and shows an inscription highly interesting to those who as yet decline to acknowledge the tender passion, but secretly are not averse to find the way.

"This is the strong
god Hercules,
His mighty tasks he
did with ease,
Yet one remains,
womankind to
please.

The maid who kisses
his mighty cheek,

Will meet her fate within a week;
The one who presses his broad forehead,
In less than a year will surely wed.
No maid, nor matron ever taunted
Him with refusing what she wanted.
Though hewn of wood, and patched with tin,
To all the gods he is akin,
And the spirits of them all
Hover over this pedestal.
So whisper what you wish the most
Fair maid, 'tis yours, and — the cost."

This figurehead some unknown sculptor in wood carved for the United States many, many years ago, when Henry Eckford was building men-of-war at the present Brooklyn Navy Yard, not only for his own land, but for Brazil, Venezuela and Turkey. He died about 1832, so that even in the tens and twenties America was renowned for her naval architects. The Eckford Club and Eckford Street in Brooklyn, bear his name, and in the New York Historical Society you may find a picture of his country house, which stood among the fields where Sixth and Seventh avenues cross Twenty-fifth and Twenty-sixth street. One reached this ample villa, a building like the old plantation houses down South, by Love Lane, a road

that turned toward the Hudson from Broadway a little above the site of the Fifth Avenue, that famous hotel for politicians, which is said to be doomed to make way for a skyscraper.



OLD MILL ON SHINNECOCK HILLS.

Many notable buildings in Suffolk County have been omitted from this brief sketch, lest it become a dry chronicle.

These harsh but racy names left by the Indians are pleasant to the taste — Quogue, Speonk, Sagaponnock, Apoquogue — since they have a flavor of salt meadows, a sound of wildness and the booming of the surf. Some, however, are sonorous, like Ronkonkoma, others sweet like Syosset, and yet

others crisp with a sharp ending like Montauk, Peconic, Shinnecock and Patchogue. Doubtless the settlers were unable to pronounce the grunts and coughs of the Indians and so they softened many words when they took them over, dropping nasals and even slipping in consonants, as when they thrust an intrusive R into "Abigado," the shelter, and called it Abrigada.

The eastern end of Long Island from Canoe Place to Montauk is a favored region not only geographically but as regards climate. Storms that come eastward down the Sound are apt to swing round between Montauk and Block Island, and so out to sea; they do little more than refresh the land with a shower. In winter the surrounding waters make for soft high temperature. Permanent and summer residents ought to form a protective organization in order to keep some control of roads and bicycle paths and wayside trees, of trolley and steam lines, of the sea beaches and dunes, an organization which might step in and have a word to say when property owners through greed or mere lack of sense start in to destroy the natural beauty of the county.

George Washington's Plan for the Capitol City

Mr. Henry B. F. MacFarland, president, Commissioners of the District of Columbia, in the course of an address before the Municipal Art Society of New York, at the Arts Club, 15 Gramercy Park, March 3, said.

"George Washington's last task was the establishment of the National Capital. Through the Presidency and until his untimely death he showed the greatest interest in it. So did Jefferson, with his personal knowledge of foreign capitals and the maps and plans he had

brought back from Paris, and so did Madison, L'Enfant, the French engineer, and Ellicott, the American engineer, were technical assistants. But the idea, the plan, of the Federal City, was George Washington's, and is his prediction written as in his own clear writing that the then new and feeble nation would live and grow to need a capital city of such magnificent proportions. Washington, himself a surveyor and engineer, knew how to plan a city, just as he knew how to choose the site, the most perfect in all the range of the Potomac, the river on which the capital was to be set under the bargain between Alexander Hamilton and Thomas Jefferson. But even

Washington's reputation for common sense did not save his plan from ridicule while the nation seemed to most home and foreign statesmen simply another experimental confederation likely to fail like the rope of sand which went before it. It took a hundred years to fully justify George Washington's plan for the Federal City, which inevitably Congress called by his name. It took three-quarters of that time to bring the national government to the point of doing anything like its duty to the National Capital which for seventy-eight years it required the Washington tax-payers to maintain. It was not until the Civil War had ended all the long effort to move the capital westward, that the national government felt that its seat in Washington was permanent. Then Alexander R. Shepherd, a remarkable native Washingtonian, backed by President Grant and the Congress, took up Washington's plans, brushed the dust off them, and began to execute them, driving the plowshare of progress literally through all the principal streets and avenues. The unique advantage of Washington, in being planned before it was started, then appeared. From that day it has become more and more apparent as steady, and latterly rapid, progress has been made in the physical development. All that has been done in streets, boulevards, parks, bridges, buildings, has been under George Washington's plans. When in 1900, as an outgrowth of the National Capital Centennial Celebration, the Senate Park Commission, composed of Burnham, McKim, Olmstead and St. Gaudens, was appointed to prepare a comprehensive plan for the park system of the District of Columbia, it commended its report to all judicious minds by saying in effect that George Washington's plan could not be improved upon and that nothing remained but to apply its principles throughout the entire District of Columbia. And this after two years' fresh study of all the plans in the world and of all the capitals of Europe.

"The genius of George Washington is the very spirit of the National Capital. It is fortunate that all its Municipal Art in every form is the expression of the will. It has not the force of law as to details or the application of its principles to modern conditions. Congress has not enacted it in statutes, but it has the authority of reason and the force of merit. Much has already been done to make Washington the City beautiful, much remains to be done. But with every year it is clearer that it will all be according to the idea of the great seer who planned it. To his mighty faith we owe the magnificent boulevards and streets arranged so as to give vistas and provide small parks everywhere, dressed with more trees than Paris and leading to large parks which when complete will encircle the city in magnificent splendor. We expect to go right on. All the park-lands necessary ought to be bought at once, but they will be bought eventually. The Anacostia River on the east and Rock Creek on the west will be given beauty for ugliness. We shall add more statues to the thirty, one-third equestrian. But we shall with the increase of the water-supply, add fountains also. The public buildings will be more perfect architecturally and better placed and the private buildings will be more in harmony with them. In the last seven years of municipal progress we have not only gained a filtration plant and a new sewage disposal system, the abolition of railway grade crossings, but we have gained a District Government Building, a bridge and a Union station, which we are justly proud to have our visitors see. Best of all, we feel that what

has been done has formed a habit of thought which insures that what is to be done will be better still. The civic awakening everywhere to the meaning and importance of Municipal Art naturally had greater effect in the city which George Washington planned and which had his plans to execute, than anywhere else."

A Geographical Index of Measured Drawings

During the past quarter century there has appeared in the architectural papers of this country illustrations consisting of photographs of completed buildings and reproductions of scale drawings of every building of consequence erected.

These publications, too bulky to form a part of the architect's library, are to be found in the larger public libraries throughout the country, but owing to the lack of a comprehensive index arranged geographically, it is too time-taking a process for the architect to avail of the information contained.

The following clipping from the London (England) *Builder* is of much interest, and it is to be hoped that some of the larger libraries in America will follow so excellent an example:

"The Victoria and Albert Museum has issued what seems likely to be an exceedingly useful pamphlet, consisting of a topographical index to measured drawings of architecture which have appeared in the principal British architectural publications. By the word "topographical" is meant that the subjects are alphabetically catalogued under the names of the towns in which the buildings are situated. The publications indexed are not only the architectural journals sold to the general public, but the Sketch-books of architectural societies which have only a limited circulation among members, and are therefore less easy to come at and make acquaintance with. To architects or writers on architecture in want of illustrations of a special subject or of the architecture of a special district, such a catalogue may be of the greatest service. It is published at the nominal price of three-halfpence."

Recent Court Decisions

DISPUTED BILL FOR PLANS.

BERNSTEIN *v.* BERNSTEIN & GOODMAN, SUPREME COURT, NEW YORK, APPELLATE TERM.

102 *New York Supplement*, 751.

The plaintiffs, as architects, furnished by contract, four plans for the defendant. They claimed an agreement to pay \$150 for each plan, or \$600 in all. Defendant claimed that the agreed on price was \$125 for each of two plans and \$100 for each of the other two, or \$450 in all. The plaintiff admitted receiving \$375 in cash and that they were to allow defendant a deduction of \$75, leaving due \$150. The trial judge gave plaintiffs judgment for \$75, evidently believing the defendants' evidence as to the terms of the agreement and allowing the deduction of \$75 from the amount of their bill. On appeal the court held that the plaintiffs were either entitled to the entire amount of their claim, viz., \$150, or that the defendant was entitled to a judgment in his favor, and that, therefore, the plaintiffs were entitled upon their appeal to a new trial, which was granted.

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Acoustics, as Applied to Large Interiors—Major George B. McClellan, of New York, an Appreciation.	

WHILE very apparent progress has been made by architects during the past twenty years toward overcoming the numerous and complex problems which developed as a consequence of the adoption of the steel-frame type of building with its ever-increasing height and requirements, there is one problem much older than the steel-frame building which, barring the investigation and research of certain teachers and scientists, remains practically in the same half-understood experimental stage that characterized it a quarter of a century ago. It is the problem of acoustics applied to large halls or assembly rooms. Probably there are few architects who have not at some point in their professional careers, perhaps when employed with a commission which included a large hall or auditorium, searched long and diligently for some work or treatise, promising a practical yet absolute and definite solution of the problem. That these quests have been in the majority of cases unsuccessful is probably due to the fact that works presenting anything like workable formulæ, methods or even theories by which the acoustic properties of a proposed hall can be predetermined, or a hall designed which will surely possess satisfactory acoustic properties, are not so far as we are aware of frequent occurrence in technical literature.

OF course much has been written concerning the general theory and it will be at once observed that there are certain well-known principles regarding reflected sounds or echoes which must be given consideration, and

also it is recognized that the choice of materials and surfaces, even furnishings, as well as form and proportion of the room, has much to do with results.

That the problem is entirely soluble as applied to an isolated hall was demonstrated by Professor Sabine in a series of articles contributed to the AMERICAN ARCHITECT several years ago, but considerable inquiry among architects elicited the information that the formulæ deduced by Professor Sabine, where their existence was known, were considered unwieldy, complex, and of difficult application to the ordinary problems confronting the practitioner. It was also pointed out that the study of the problem in practice in order to be entirely effective must extend to and include the environment as well as the work in hand. Of course it is possible, if windows and openings could always be kept closed, that the hall might be studied quite independent of the surroundings, but this would be practically an impossible condition, particularly in summer.

BUT even if architects were able to accurately foretell the effect of neighboring buildings, rocks or trees upon the acoustic properties of a proposed hall, would they be justified in taking them into account to the extent of altering any intended or desired treatment or dimension? For might not the environment change by the demolition or addition of buildings at any time, thus rendering the provisions made ineffective?

While the work of Professor Sabine has unquestionably been of great value in clearing up the air of mystery that has from time immemorial seemed to envelop the subject of architectural acoustics, at least in the minds of many practitioners, it seems quite apparent that the entire subject will require much further study and research before it can be considered as approaching anything like an exact science susceptible of simple and ready application to the designing of auditoriums or places of assembly under the severely limiting conditions ordinarily encountered, and in the meantime failures of halls in this respect are just frequent enough to cause architects who are employed on work of this character much anxiety which at present it would seem could only be entirely relieved when the hall is completed and actual tests made.

IN striking contrast with the actions and utterances of other prominent public men, Mayor McClellan, of New York City, has, during his administration, consistently embraced every opportunity to further, both by word and deed, any effort or movement which has taken form looking toward the beautifying of the city or the advancement of art. Not only has his appreciation of architecture, an evidence of which was furnished by his humorous but hardly exaggerated portrayal, in a recent speech, of the emotions which might reasonably be aroused in even the ignorant by an unexpected view of the City Hall on the one hand or the Federal Building on the other, indubitably been of very real value to this city during the past few years, but the education, culture and polish which enabled the chief magistrate of the city to deliver an oration such as that delivered at the recent Saint Gaudens Memorial meeting, disclosing the highest artistic appreciation, has added a long missing dignity and quality to the office and distinguishes New York's Mayor among public men of the present day.

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GARDEN VIEW, ROSEMOUNT, PA.

The Planning of Country Houses.

(Concluded.)

By WILSON EYRE

IN planning a large country house there would be little or no change in the bedroom plan suggested in the foregoing part of this article as appropriate for a moderate-sized house, except additional rooms and increase in their size, a sewing room, and in many cases a room for valet or maid for the brushing and care of clothes, and also a nursery or playroom.

On the ground floor a number of additions can be made, both for luxury and comfort. The stairway hall can be large and imposing, the reception room becoming a salon or parlor. I avoid the use of drawing room, as this name really means withdrawing room or living room. A music room is a desirable feature; it affords a place for piano practice, which may be continued without interruption, and also avoids annoyance to occupants of the

library and living room, or visitors in the reception room. A small study or office for the head of the family is necessary, and a large library. In a house of this kind the dining room, of course, would be quite large, and it therefore would be well to have a smaller and more homelike room, usually called the breakfast room, just for family use, or when only two or three are at home, which room should also have the morning sun and should be easy of access to the pantry and service quarters.

In addition to these rooms a billiard room can be arranged, either in the basement when the ground is sloped and large windows can be secured; if it is placed on the ground floor it should be so situated that the sound does not disturb the occupants of the library or other rooms which need to have quiet; it can also be arranged

on the bedroom floor, and in this case should be on the side of the guests' wing and should be separated from the bedrooms by a hall, with double doors.

Beside the washroom and coat closet, there can be added a good-sized cloakroom for guests, so that they will not have to be shown to the second floor. A conservatory or glassed-in porch, connected with one or more of the rooms and placed on the south side of the house, adds great value to the beauty of the rooms.

A swimming tank in the basement is also desirable and can be near the billiard room. It can also be made to communicate with the owner's dressing room by a private stairway—a small stairway of this kind in addition to the main stairs and back stairs is very useful in a house as large as I am describing.

The breakfast room can be used in many cases for the children, but in the case of quite a large family it is best to have a children's dining room, which can also be used for the upper servants apart from the kitchen servants.

If the ground on which the house stands slopes in any direction, terraces should be planned. A paved terrace on the sunny side of the house forms a delightful place to sit at certain seasons of the year when it is still warm enough to be out of doors and pleasant to have the warmth of the sun.

In our climate a country house must be planned for both extremes of temperature; it should have thick walls with inside furring to keep it dry—this thickness of wall is a protection from the heat as well as the cold. There should be ample supply of windows, but not long stretches and groups of windows as in England, where there is little sun. Glass being a great conductor, a great expanse of

glass tends to make the glare and heat intolerable; therefore, in designing a house in the Elizabethan or Tudor style, it is well to reduce the long groups of windows. Windows suitable for outside shutters are the best for our climate, as these are almost an absolute necessity except when the house is surrounded by trees.

In my opinion open fireplaces should be in almost every room; of course, this increases the service necessary, but there are seasons of the year when a house can be heated entirely by open fireplaces. In fact, there are so few times during our average winter when very much heat is necessary that we can rely on the fireplaces during most of the year, the heat from them being much more agreeable than any other; then there is the beauty of the fire, with its appearance of comfort, and to all this must be added the fact that much of the fine imported furniture, such as inlaid pieces, will not bear the test of steam heat, even when seasoned by many years in other countries.

Porches should be ample, but so arranged as not to keep too much sun from the rooms. There should be a morning and afternoon porch, and a porch connected directly with the dining room and easy of access from the serving quarters. This can be used as an informal dining room in warm weather; it is an advantage to completely screen this porch as a protection against insects, etc. Porches in connection with sleeping rooms are much to be desired, but, as they should be covered, there should not be too many, as they keep out the sunlight and are places for snow to collect in the winter.

The requirements of a country house are many and varied, and I have been able to touch upon only the most important.

Courtyards and Staircases of Italian Cities

TRANSLATED FROM THE FRENCH OF ALFREDO MELANI

IN the ancient buildings of Italy the decorative treatment of the courtyards and stairways received particular attention. No special work has as yet been published on this subject and to attempt to describe all the interesting examples to be found throughout Italy would be a task necessitating much labor and many volumes.

While Italy is famous for its beautiful façades, the number of equally beautiful and interesting courts, with their stairways, greatly exceeds them.

The searcher for courtyards worthy of notice cannot be guided by the exterior of the buildings. It very often happens that a façade wholly uninteresting screens a most beautiful courtyard, and the only way to insure that one may find the best examples is a veritable "house to house" search for these architectural details.

If one desires to find the best the search must not be long delayed. The hand of the "restorer" (?) is fast destroying the picturesque value of these places, distorting the purity of line by the substitution of a cheaper and more modern construction to meet the demands of twentieth century utility.

The work of time and history is rapidly being effaced.

One of the most beautiful of all the courtyards of Italy is that of the Borgello Palace at Florence. This building, at the present time, serves as a National Museum. Its precincts have been the theatre of many historic hap-

penings, and to the great charm of its original construction time has painted it with the softest and most beautiful colors. Its sweeping arcades, its vista of well proportioned pillars, all combine to make this court the most interesting place architecturally of the entire palace.

The original design of the architect was to erect a dignified and worthy residence for the head of the government, the new political power, which at the middle of the thirteenth century was steadily growing. This interesting palace was begun in 1250, and during a period of almost one hundred years experienced many changes, so that in 1345, when the building was crowned and vaulted under the direction of Bonci di Cione and Neri di Fivra-vanto, there was little, if any, left of the original design.

Just what this original design was like cannot be exactly known, but to-day, when viewed by one conversant with the history of Italy, it forms a stage setting for popular uprisings of arson, intrigue and suffering. Near the loggia is the high wall, richly embellished with armorial decorations. Then there is the grand staircase, guarded by the Marzocco (1367) and divided by an architrave in the shape of a grille (1502), with its two lions and the statue of St. Catherine de la Rone. After all its many vicissitudes, this beautiful courtyard survives. It is the most famous of all those constructed during the Middle Age, and has been the theatre of many struggles, both

political and religious. It encloses such masterpieces as La Victoire, made by Michael Angelo for the tomb of the Pope Julius II. in Rome.

Only slightly less famous than the courtyard of the Borgello Palace is that of the Palace of Pretorio at Pistoia.

This palace is the old residence of the magistrates of Italy and dates back to the fourteenth century. It has suffered many renovations, but sufficiently preserves its old appearance to claim respect for its architectural excellence.

It has sweeping arcades and is rich in decoration, somewhat after the style of the Borgello, and is equally replete with historic association.

On the left of the entrance is the table, and seats of stone of the old Court of Justice, elegant in design and characteristic of the early part of the sixteenth century, being executed in the year 1507.

This interesting courtyard is less sombre in its color effect than that of Borgello, as it contains many mural paintings and decorative garlands of faïence, imparting a more cheerful effect.

Journeying from Florence, let us turn in the direction of Sienna. Here one may find enough interesting examples to fill a large volume of description.

The courtyard of the Palace Grotanelli, conspicuous for its Bilobated windows, is a most curious exception in Italy, where almost everywhere the windows are composed of three parts.

A visit to the castle of Quattro Torri, in the valley of Orcia, would prove equally instructive to the architect and the mural painter. Sienna, pre-eminently of Gothic character, presents many interesting Gothic palaces, more so perhaps than any other town of Italy. The City Hall, begun in 1296, the palace of Tolomei, of the Sarocini, the Bonsignori and the Salimbeni, all remind the traveller of the Gothic buildings of San Gimignano. All these will delight the student of medieval architecture, a style so prevalent in this part of the Italian Coast. Not far from Sienna is Poppi, with its celebrated palace. This palace,

similar in construction to that of Borgello, was built by the Guidi family, after plans by Arnolfo di Gambriolo (1299), and of historical interest, as it was the abode of Dante while in exile, and also, because here, in 1343, Gualtiero di Brienne ratified his renunciation of the Lordship of Florence.

The staircase in this palace is of particular importance. It is an exquisite piece of picturesque architecture, rendered more beautiful by the hand of time. Its symmetry is perfect and its study recommended to the architectural student. To the student is also suggested a visit to the Castles of Piedmont, of Fenis and of Verres, in the valley of Aosta. These castles, which belong to the fifteenth

century, represent a late Gothic style, and all have fine courtyards and staircases.

At Taormina, on the Island of Sicily, famous for its Greek theatre, is another courtyard worthy of a visit and critical inspection. A number of Gothic ruins beautify this town, among them the picturesque remains of the Badia Vecchia, incrustated with lava, and the courtyard of the Corvaia Palace, the perspective of which suggests a great sculptured fragment.

While Southern Sicily may be truthfully called a district of architectural beauty, Northern Italy presents equally attractive examples.

The Ca' d' Oro, built during the early years of the fifteenth century by a group of artists—Giovano and

Bartolomeo Bon, architects of the celebrated Porta della Carta, Matteo Raverti, of Milan, Piero di Niccolo and Lamberti d'Arezzo. In this building the purity of the architectural lines, combined with the applied ornament, produces a most harmonious ensemble. A description of this courtyard would not be complete without reference to the splendid Venetian well it contains. It is covered with characteristic ornamentation and well executed sculpture.

The great courtyard of the Ducal Palace, Venice, is probably one of the most remarkable private monuments in Europe. From the fourteenth to the seventeenth century it changed owners many times. This palace is a



COURT AND STAIRWAY, CHATEAU DE FENIS, PIEDMONT, ITALY.

silent witness of the history of true Venetian art, before it has passed in review the great artists of the republic.

On entering this courtyard the critical visitor will note the lack of symmetry with which everything is stamped.



DETAIL OF COLUMN IN COURT OF OLD PALACE, FLORENCE, ITALY.

Artistic liberty seems to dominate this court and stairway, which was conceived in the highest period of Venetian art. In spite of this ignoring of architectural traditions, the effect is eminently satisfactory. The delicacy and richness of the detail outshadows all else, in spite of the unequal windows, double friezes and pillars of varying size and character.

The courts and stairways already referred to are all on the regular route of the tourist and could not be overlooked. They are well known monuments of architectural beauty, but the student will find courtyards of rare beauty, well worth the time spent in locating them, in the dark lanes and almost deserted places between the canals in Venice, where a gondola never passes.

An attempt to attain monumental form in a small space is instanced in the curious staircase of the Palace Minelli or Contarini. It is a winding staircase surrounded by an architectural whole, and suggests the belfry of the Cathedral at Pisa. This Minelli staircase is the work of Giovanni Condi. It is to be found in one of the picturesque and less frequented parts of Venice.

Near Venice, at Padua, or at Vincence, where the dignified work of Palladio attracts the art student, one must not overlook the many good examples of the earliest re-

naissance period. The courtyard and staircase of the Vescovado (bishopric), in the Palace Coleoni-Porto, is a splendid example. It is Gothic in style and the stonework, which seems to form part of the beams, presents a novel and artistic effect of great interest.

Another courtyard suggesting the early renaissance is that at Trento, in the Castle of Bon Conseil. This is in marked contrast to the usual florid Venetian type, and commands respect on account of the stern simplicity of its architectural construction. This courtyard suggests the famous one in the Ducal Palace of Urbino, the masterpiece of Luciano Dellaurana.

There still exist in Italy to-day courtyards and staircases dating back to the sixteenth century far more impressive in character than those of the renaissance period.

To instance these there is the courts at the Palace Gondi, Florence, and at the Java Palace, Bologna. That at Gondi, the masterpiece of Giuliano de Sangallo, is probably the best in Florence. Its fountain, the capitals of various designs, the fine lines of the cornice, the sculptured coats of arms, and the gray light which suffuses it all, makes this an attractive spot for the architectural pilgrim to pause and rest while searching Florence in quest of the beautiful.

The Palace Gondi was built about 1481 and is contemporaneous with the Java Palace at Bologna. At Milan there is the long courtyard of the Hospital Maggiore, by Richiori, and the courtyard of the Palace Marino, both rich in sculptured detail.

The Marino is by Alessi, who came from Perugia, and who, while in Rome, had studied with Michael Angelo. This courtyard shows not only the work of the master architect, but also proclaims the influence of the decorator. The traveller in this part of Italy will be impressed with the decorative treatment of these courts. Here one finds in the smaller enclosures clever paintings, perspectives that give the visitor the impression of long vistas and convey a sense of vastness which would otherwise be lacking.

This decorative treatment in color seems to have reached its height about 1560.



COURT IN THE CA' D' ORO, VENICE.

Among the staircases belonging truly to the eighteenth century the first in importance is the well known Scala Regia, at the Vatican, Rome, by Loranzo Bernini. It is considered the ideal staircase.

The staircase in the Madama Palace in Turin is truly a wonderful creation. It was done in 1720 by Felippo Judarra, and his original drawings are now in the Municipal Museum at Turin. There is also to be found in Turin the splendid staircase of the Royal Palace, the work of Amadeo Castellamonte. Rich in stucco, it shows how artistically this material was used by the architects of the seventeenth and eighteenth centuries.

Rome has numerous interesting places of this description of great interest to the student. Besides the Scala Regia, there are many imposing examples which contribute largely to the interest that attaches to the Eternal City. The staircase at San Trinité des Monts, with its striking perspective (1724-30), that of the Villa Albany and the Villas Borghese, Pamphily and Doria.

Brescia is particularly rich in courtyards, as is also Bergamo and Pavia.

An impressive staircase but little known is that in the Crivelli Palace, Milan.



COURT AND STAIRWAY, PALAIS GROTANELLI, SIENNA, ITALY.

When confining ourselves to the nineteenth century, from the early Empire style down to the esthetical liberty of the "*dolce stil novo*," of the new art, it is not at all rare to encounter courtyards and staircases which are a

credit to their authors. Napoleon dominated his time, and his name meets with a response in all the cities that were visited by this "gloomy genius." Italy had to give way to Bonaparte, and Italy was "Napoleonized" after his fashion. Nobody has ever studied the Empire style with the thoroughness it deserves; perhaps it has not given as yet the necessary impulse to this study. To-day the Empire style is fashionable for decorations. The future lies in the modern style, with or without

"skyscrapers," at least on this side of the ocean, where the air is not yet so costly as to justify the erection of buildings twenty-five to thirty stories high. If some day this should be the case, then good-bye to the staircases that up to now have been objects of the best architectural skill.

ALFREDO MELANI.

The Tariff On Art

NOW that a National Gallery of Art is assured, with a dignified home at the National Capitol a possibility, we trust that pressure will be brought to bear on Congress to secure the enactment of legislation that will remove the tariff that is working such harm to the cause of Art in America.

Just how this unfortunate tariff prevents our National Gallery from acquiring examples that would dignify a collection and make it worthy of the Government is well stated in the following article in a recent issue of the *New York Times*:

"The castles of England, the chateaus of France, and the palaces of Italy are filled with old masterpieces which are a perfect delight to the traveler who may be fortunate enough to gain admission. One thinks of Port Eliot, the Devonshire home of Sir John Eliot; Raby Castle, the Lincolnshire home of Sir Henry Vane; the Chantilly Chateau, with its magnificent collection gathered by the Duc d'Aumale; the Palazzo Strozzi, the home of the famous enemies of the De Medici, and countless others. From time to time the owners of these valuable old paintings are compelled by necessity to sacrifice them, and they are put up at auction at Christie's, in London, or at the Hotel Drounot, in Paris.

"In this way the opportunity of the American collector is created. From these collections are supplied the ever-increasing number of museums in the United States, which rely almost entirely upon the generosity of private collectors for the expansion of their collections. It seems a pity that the United States Government should be so short-sighted as to discourage this generosity in our American collectors by imposing a heavy duty upon their importations of masterpieces.

"Our Congressmen are just beginning to realize the tremendous disadvantage under which the art duty places the American collector at the foreign auctions. He must not only outbid his German, his French, or his English competitor, but he must outbid them, in effect, by over 20 per cent., i. e., by more than the amount of duty which the American must pay, but which his competitors' Governments do not require them to pay.

"Suppose for some reason the Duke of Marlborough should offer the Blenheim Madonna for sale at auction. It is one of the best preserved specimens of Raphael's work, and would be a very valuable addition to any American museum. It is valued at \$350,000.

"The American bidder would be obliged to pay over \$420,000 for it if he would outbid the German who is

willing to pay \$350,000, because the American must reckon the art duty of \$70,000 which he would be obliged to pay in addition to his bid, and which the German is not obliged to pay.

"No wonder the agents of the German Government have successfully outbid Americans for the last few years in London. The German Government has successfully entered upon the policy of supplying the German people with the best examples of art for the purpose of improving their industries, in which design is an important factor. The art duty imposed by our Government has without any question contributed to the success of the German Government in this direction.

"Why should not the American Government adopt the same policy, if not directly then indirectly, by repealing the duty on works of art, thereby removing the disadvantages under which the American labors at European auctions, and encouraging the increased importation of masterpieces into this country?

"Ours is almost the only civilized country which imposes a duty on art."

In an article printed in a current issue of a monthly magazine, the writer prefaces his discussion of the question with this extract from President Roosevelt's message of December last year.

"So far from there being a tariff on works of art brought into this country, their importation should be encouraged in every way."

Supplementing this, he states:

"There is no reason why the abolition of the tariff on art should wait upon a general possible tariff revision, removed as the subject of art is from the domain of protection."

And, to still further quote from this article, and thus establish a point on which we wish to dwell: "One wonders how long it will be necessary to put forth exertion to overcome counter-movements in the advance of artistic sentiment, or the baleful influence upon esthetic decisions of men accidentally in authority, who are without training or taste in art, and, not only that, are militant philistines, instinctively opposing every suggestion coming from artistic quarters."

Divested of its polite phrasing, the writer evidently means to lay the blame for this tardy action on the members of Congress, and as evidence of his pessimistic view of the situation, entitles his article, "Must it be a hundred years' fight?"

It is doubtful if much can be gained in this battle for free art by abusing Congress for its lack of appreciation of the artistic needs of the people. There is probably no more astute body of men in America than those who represent us at Washington. While they delight to pose as statesmen we know them to be shrewd politicians. They doubtless realize just to what degree they may ignore the wishes of their constituents, and no relief can be expected from existing conditions until the necessity for action is brought to their attention in an insistent and unmistakable manner.

It is suggested that the proposed Art Federation, soon to meet in Washington, which will represent every art and craft organization in America, memorialize Congress. Perhaps more can be accomplished in this way than in any other.

THE AMERICAN ARCHITECT has endeavored to secure an expression of opinion from architects, artists, art dealers, collectors and officers of the leading art societies.

It is most interesting to note the unanimity of opinion expressed in the letters received. This opinion is summed up in a letter received from one of the leading men in this country, a member of the National Academy, and the president of the leading social art club in America. He states, referring particularly to paintings:

"My own personal feeling in the matter is, that nothing ought to stand in the way of bringing the best paintings into our country. At the same time it may be wise to keep out the flood of mediocre things that the dealers would immediately begin to import, just as they did some years ago when for a time we had free art. I have sometimes thought that a fixed duty on all pictures, that is to say, a hundred dollars on every painting, would certainly keep no masterpiece, valued at thousands, from coming in, while it might keep out paintings for which a dealer paid a hundred dollars a dozen in the studios of Paris, and expected to sell for that much apiece or more in this country."

Mr. William T. Evans, of Montclair, New Jersey, the generous donor of fifty-six American paintings to the National Gallery, speaks with authority on this subject. He has collected more pictures than any man in America, and he writes as follows:

"I am unequivocally in favor of placing real works of art upon the free list. A tariff on art, intended by its benighted authors as a tax on luxury, is really a tax on education and culture, it is a relic of barbarism and should be abolished at once. No civilized European country imposes such a duty; on the other hand several, including Italy and Spain, place a heavy export tax on art works, in order to keep the treasures at home. If the United States Government needed the revenue, there might be some justification for a small specific duty, as for instance \$50 or \$100 on every painting imported. This would keep out the trash and would not interfere with the importation of masterpieces. Mr. J. Pierpont Morgan and other prominent collectors have got together and hold in Europe important works of art which they properly decline to bring to this country until this odious duty is abolished. Even in Pennsylvania the courts take an enlightened view of the matter and have decided that works of art, both paintings and sculpture, are not taxable."

Mr. R. A. Cram, in a recent address clearly stated the case in these words:

"There is too much talk nowadays about the mystery of art and the elect nature of the artist. There is a general tendency to consider beauty as an amenity of life and art as a luxury, all very well for those who can afford it. No more monstrous and unhealthy heresy could possibly obtain, but that it does, and almost universally, is proved by the fact that this country is governmentally serenely indifferent to the disgrace that inheres in a tax on art. The matter is looked upon as a proposition in economics, whereas really it has nothing whatever to do with economics or even esthetics; it is simply a question as to whether we are a civilized or a barbarous nation."

Mr. Cass Gilbert, president of the American Institute of Architects, is equally insistent in favor of free art, and states to us:

"I believe there should be no tariff on works of art or on books on the subject of the arts of architecture, painting and sculpture. In the general interest of people, the government could forego the comparatively small revenue received under the present tariff on works of art, and

certainly the artists neither desire nor are benefited by a tariff which tends to exclude works of art.

"Art is not the luxury of the rich, for as a rule the rich care little for it; they are too much occupied with other things. Any one who cares to test this question should visit any museum of art in this country and he will find that ninety per cent. of those that visit the museum are the poor or those who are only in moderate circumstances. Art makes for civilization in its broadest sense and should have no national boundaries."

The Copley Society's Loan Exhibition of paintings opened to the Boston public on March 11, 1908, offers a striking object-lesson in favor of abolishing the duty on works of art.

The exhibition consists of 154 paintings, representing the French School of 1830, the insurance valuation of which is about one million three hundred thousand dollars. For the most part they have come from private collections, and the owners have lent them for the benefit and education of the public. With very few exceptions, duties have been paid on all these paintings in spite of the fact that the public is a distinct gainer by their importation, as this exhibition proves.

Under our present tariff this collection of masterpieces, whose influence for good taste and a better knowledge of art is immeasurable, could not be brought into this country to-day unless it paid a duty of a quarter of a million dollars.

The exhibition very well illustrates the fallacy of the argument that works of art are a luxury, that they are owned by the rich for their own exclusive enjoyment, and that therefore they should be dutiable.

If the duty on art were repealed, the money now paid in duties would be used to increase the nation's store of art treasures, and the resultant gain to the fine arts in the United States would be far-reaching in its effect.

As a matter of fact, these paintings are held in trust for the public by their owners, and instead of maintaining a barrier, such as the present duty certainly does, the government should offer every possible assistance and inducement to those who are able to do so to bring into the United States as many beautiful works of art as they can.

But in the end, when the importance of these and similar questions now agitating the public mind are realized we shall see an awakening to the fact of the great practical and commercial value this question of free art possesses.

When the manufacturer and the merchant realizes that this is to him a matter of importance, that it directly affects his business, and that this obnoxious tariff is a detriment to his interests, and not as he now generally believes something only of moment to the multi-millionaire art collector and dilettante, then the question will assume the importance to which it is entitled, and art will no longer be discriminated against by our tariff laws.

Cement in Bags Transformed into a Wall

There is a wall of cement in Los Angeles which shores up one side of a building that has an artistic value never intended by the builder, says a local newspaper. He had moved his bags of cement on to the ground to be ready for work and was then called away on some other job for a day or two. In the mean time one of the very infrequent rains came and each sack turned into stone under

the action of the water and the fabric of the sacks themselves was absorbed into the cement so that it was impossible to remove it. Consequently, each sack was wrought into the wall as if it had been a boulder on the line of an old stone wall. They were then chinked and bound together with worked cement, and after a time the weather disposed of the gunny sacking, but left the blocks marked with the impress of the weave. The result is a highly ornamental cement wall, resembling at a little distance a wall of some woven material.—*Cement Age*.

Experiments on Wind Pressure

Results of an extended series of experiments on wind pressure, by M. Eiffel, the well-known French engineer, have recently been published in pamphlet form, under the title of "*Recherches Expérimentales sur la Résistance de l'Air Exécutées à la Tour Eiffel*." For the purpose of obtaining precise data on the subject, M. Eiffel had recourse to a novel method which consisted in letting fall vertically the plates or wind boards offering the surfaces to be tested, from a height of about 400 ft. in the Eiffel Tower. Above the wind board and attached thereto by springs was a cylindrical case containing suitable dynametric and recording apparatus. Through the axis of this case was a hole, through which a cable passed, and it was this which guided the assemblage in its fall. The cable was a very loose fit, but at about 60 ft. above ground its section gradually enlarged, as the earth was approached, thus braking the apparatus and bringing it to rest without shock or damage. M. Eiffel found that, within the limits of his experiments—for velocities of from 60 to 130 feet per second—that the resistance offered by air to a moving surface is practically proportional to the square of the velocity, although the exponent increases slightly and gradually when velocities exceeding 100 feet per second are employed.

The resistance or pressure in pounds, P , is represented by the product KSV^2 , where K is a constant depending on the size and shape of the surface tested; S is the area of the surface in square feet, and V is the velocity in miles per hour. At ordinary temperatures and a barometric pressure of 760 mm., M. Eiffel found that the value of the coefficient K ranged from 0.00286 to 0.00327, the latter value being apparently a maximum attained only with large surfaces. Thus, for a circular surface of 1 square foot the value of K was 0.00286, for a square surface of the same area, 0.00295, and for an area of 10 square feet, 0.00323. He also found that the resistance of an inclined surface is practically the same as that of a normal one, when the perpendicular to the surface makes an angle less than 30 degrees with the direction of motion. For greater angles the resistance proportionally decreases (zero at 90 degrees).

It is interesting to compare the values of K obtained by M. Eiffel with those recently reported in a paper read by Dr. T. E. Stanton, before the Institution of Civil Engineers. On pressure boards ranging from 25 to 100 square feet in area, which were mounted at the top of a 50-foot tower, Dr. Stanton found, from a large number of experiments, that the mean value of this constant was 0.0032, which strikingly corroborates the results of M. Eiffel. The results of M. Eiffel were obtained with wind velocities of from 40 to 90 miles per hour; the velocities in Dr. Stanton's experiments have not been mentioned in any of the recently published reports of his paper.—*Engineering Digest*.

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Favorable Outlook Towards Civic Betterment—The Fifth Ave. (N. Y.) Association—The London County Hall Competition—The Competitive System of Selecting Architects.

ILLUSTRATIONS—

House of Maxwell Weyth, Esq., Rosemount, Pa., 5 plates.

House of Theodore E. Conklin, Esq., Quogue, L. I., N. Y., 3 plates.

Additional:

Court and Stairway: Ducal Palace, Venice, Italy—Court and Stairway: Bargello Palace, Florence, Italy.

THE surprisingly rapid growth of the civic center idea or plan of development in cities of every class, as evidenced by reports from all sections of the country, cannot fail to afford much pleasure and satisfaction to architects and artists in general, and to those citizens in every community who realize and appreciate the value, both artistic and commercial, attaching to a skillfully planned and successfully executed general scheme of municipal improvements. That this movement has attained such proportions, notwithstanding the recent financial stringency which has undoubtedly had a retarding influence on municipal betterments, as well as on private or corporate enterprises, is both remarkable and gratifying. Never in this country's history has the prospect of general and intelligent action looking toward the artistic development of its cities appeared so fair.

THE Fifth Avenue Association formed in New York last week is but another evidence that the so-called hard-headed, unromantic business man has awakened to an appreciation of the value represented by a more beautiful city. The avowed object of the new association is stated to be the improvement and beautification of Fifth Avenue. The fact that something like a hundred business firms and hotels are represented in this move-

ment indicates its substantial character, and we shall await the announcement of plans for carrying out the work in hand with much interest.

FROM such reports as reach us we are inclined to the belief that British architects in general do not regard the result of the recently concluded London County Hall competition as brilliantly demonstrating the wisdom and value of this method of securing designs for the more important buildings. Among the numerous letters written and opinions expressed by architects of greater or less note there has been little of commendation for the design selected. While it seems to be generally conceded that the building proposed by the successful drawings could probably be erected for a sum not exceeding greatly the limit of cost imposed by the conditions, a quality possessed by but few if any of the others, there seem to be grave doubts on the part of some critics as to whether this subordination of all other considerations to that of cost is entirely justified. Others after expressing a keen sense of disappointment in the principal façade proposed, deprecate the use of comparatively small light wells or interior courts. In fact upon looking over the entire letter press on this subject we find the feelings most frequently expressed are those of disappointment and regret.

WHETHER the result of the London County Hall competition has added to the feeling of dissatisfaction which certain prominent British architects have long entertained toward the method employed in conducting competitions in England can perhaps not be definitely stated, but certain it is that there has been much written of late on the general subject, and many suggestions offered looking toward the improvement of certain features. One of the most notable modifications proposed is that of substituting a jury of three assessors for the one ordinarily employed hitherto in all competitions for buildings costing more than \$75,000. The debate and correspondence which has followed this proposal is of much interest and would seem to apply with equal force to conditions in this country.

UNQUESTIONABLY the results of the competition system as carried on under the most favorable conditions are far from ideal or satisfactory. How often have we seen the conditions or rules of a competition transgressed or ignored and the offending competitor rewarded with the first prize? And, again, we have seen the first prize awarded for a particularly clever solution of a problem, and then the second and third prizes bestowed on designs presenting totally different solutions, while among the designs submitted, apparently overlooked, has been one based on the same principles and offering practically the same solution as the one placed first. Or we sometimes find the assessor peculiarly susceptible to a finely rendered elevation, or a particularly attractive plan, forgetting that a design consists of elevations, plans and sections. It seems possible that a jury of three might lessen the liability of error, with its disheartening effect, but it would also increase the cost of competitions, unless as is proposed by some, the present fee is divided among the three assessors. The result of such a step would seem to almost preclude the possibility of securing the highest talent for this work.

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FOUNTAIN HEADS—1908 EXHIBITION, ARCHITECTURAL LEAGUE OF NEW YORK.

Fountains

THE origin of the fountain is shrouded in the mystery that envelopes primitive man. Born of man's necessity, he would not only take measures to conserve a supply of water, but also devise some means to divert it from its usual channels, to more easily accessible or convenient places.

And, when he had so conducted it, by trenches, or at a later period through pipes, into the village, he found it a further convenience to store a supply in basins, which were usually hewn out of the rock of some hillside slope.

From one basin he learned to convey it to a secondary; this secondary basin was larger and formed a place in which he could wash his clothes and provide water for his domestic animals. This form of fountain, with often a succession of basins, has been many times found in excavating long buried cities.

The word "fountain" in its original application, was meant, no doubt, to designate a spring, with a basin or trough to catch and hold the water, but as man progressed towards a higher civilization, he learned that the practical might also serve as a vehicle for the decorative. We find that the fountains of early Greece were but rude basins, but as these progressive people advanced to a higher civilization, the fountain became more than merely utilitarian, and was the subject of much decorative skill, showing at the different periods the advance of the Greeks in decorative art.

The first nation to build a system of water distribution was the Romans, and the Rome of to-day is supplied by the same ancient stone aqueducts that were built more than two thousand years ago. In the time of Pliny, 23-79 A. D., there were more than four hundred fountains in

Rome, each with a basin and drinking trough. These ranged from the most primitive type to highly decorated fountains in the public places, monumental in character, and marking a central point of assemblage for business and social intercourse.



ARCHA DELLA MOLA, AN ANCIENT ROMAN AQUEDUCT.

This primitive method of supplying water to the dwellers in Rome was in existence as recently as the early 80's, and there was no distribution of water throughout the houses up to that time, the different stories being without a water supply. There was in most cases a recess in the court-yards, with a trough into which a stream of water poured, generally from some decorative ornament, often a lion's head. A bucket furnished with a pulley, over which rolled a wire, could be lowered and raised from each floor at will. This primitive method exists in many places in Rome at the present time.

The fountain has ever been a favorite subject in art, in song and in story. Tadema has painted it as the central motives about which to group his splendid figures, writers of all ages have used it for the centre of their stories, as did Boccaccio, and its frequent reference in scriptural writings have inspired sacred song writers to compositions that are known and sung around the world. A stream of running water lends itself readily to decorative treatment. The great artist-sculptors for centuries past have realized its possibilities, and have designed and modelled fountains that stand to-day, monuments of constructive and artistic skill. To enumerate these and their location would be to compile a list of the principal cities of Europe.

This fact proves the value of the fountain, not merely as a necessity, but also as a decorative motive in parks, converging and intersecting thoroughfares, and while this value is so well recognized abroad, it is much to be regretted that its worth is not better appreciated in America.

While so much is being said and written about artistic civic centers, it appears that the fountain and its possibilities present an excellent opportunity to furnish at moderate cost an object lesson as to the value of some artistic form that would greet people out of doors and lend variety to the monotonous prospect of the dwellers in large cities.

At one time we believed that a most important movement in this direction was inaugurated. There was an announcement in the daily papers that a competition would be held by a certain humane society in one of our

large cities for designs for a series of drinking fountains for man and beast. We naturally inferred that these, while serving the immediate purpose intended, would also present a good decorative treatment. Vain hope; upon inquiry we learned that in awarding the prizes for this competition the artistic value of the fountains was considered of least importance—durability and utility were only considered.

To quote an officer of the Society: "A wooden trough, or something not easily broken and speedily and cheaply repaired, would best answer our purpose. We do not care about the artistic side of the question at all."

We do not believe this view of so important a subject would be tolerated abroad, where even the humblest peasant, through contact with true artistic surroundings, knows and appreciates the value of such an environment.

Any one who has visited Europe, and particularly southern Europe, and has admired the many fountains with their sculptured ornament, or along the dusty roads of Italy has seen the wayside springs, with their shrines, will appreciate what might be accomplished here in America.

If every statue raised in this country could stand on a base devoted to some purpose, either a fountain, a seat or exedra, or mark an aisle of safety in crowded thoroughfares, as, for examples, the St. Gaudens Farragut in Madison Square, or the Richard Morris Hunt me-



FOUNTAIN ON CORNER OF THE PRUDENTIAL BUILDING, NEWARK, N. J.
Messrs. George B. Post & Son, Architects.

morial on Fifth Avenue, this city, our streets would begin to take on something of desirable attractiveness.

When this decorative treatment of smaller open spaces has become necessary by public demand, the creation of the civic center, by an equally insistent people, cannot be denied.

In many instances the treatment of the wall at sidewalk levels in large buildings offers good opportunity for the introduction of fountains. The Gothic fountain placed on the corner of the Prudential Building at Newark, N. J., designed by Messrs. George B. Post & Son of New York, is a fine example.

When the people awaken to the fact that the ability to appreciate good art, with all its refining influence, is not confined to the rich, but can be made a part of the life of even the poorest, then, and not until then, will all the many desirable schemes for civic beauty be pressed to an assured and long desired consummation.

The Limitation of Height and Area of Buildings in New York

By ERNEST FLAGG.

SURELY, the future character of the city is a matter of importance to all its inhabitants; every one will be affected more or less by it, so every one should be interested in what it will be.

This future character of the city will, in all probability, be determined by the action the new Building Code Commission takes in regard to the limitation of the height and area of buildings.

It seems to me that progress could be made toward the proper solution of this difficult problem if we could agree upon the correctness of these four propositions:

1. Any law for the regulation of building should provide the greatest liberty for the individual builder consistent with public interests and justice to neighboring land owners.

2. The present unrestricted liberty to build high is inconsistent with public interests and private justice.

3. A general limitation of height for buildings, to be effective for their proper lighting in districts which are solidly built up with them, on lots of the ordinary size and with courts of practicable dimensions, must be low,—not over five or six stories.

4. It would not be in accordance with good public policy or with justice to land owners, who have not built high buildings, to establish such a limit at this time.

When these truths are admitted, we shall have advanced a long step toward an agreement, for if we cannot let matters go as they are, and cannot sufficiently limit the height of new buildings, the only other alternative which will secure light and air, is to limit their area, above a certain height, and the question narrows itself down to the best way to do that.

The wisdom of the first of these propositions I think all will admit. As to an agreement on the second, I apprehend little difficulty—we have so many object lessons before us.

To allow unrestricted liberty to build high buildings, as at present, is both unwise and unjust, because:

As high buildings multiply and districts become solidly built up, light and air are shut out both from the buildings themselves and from the streets. Even if people are willing to build in that shortsighted way, public policy demands that they be not allowed to do so.

Streets designed for a city five or six stories high, become too congested when the entire area is built up to several times that height.

I understand that in one building the elevator service is designed for 10,000 passengers an hour, while the subway in front of it has a capacity of only 40,000 an hour. If this is true, need any more be said?

In districts solidly built up with tall buildings, fires may break out above the reach of the Fire Department and spread over large areas unchecked.

Private land may be built in on all sides to any height by buildings taking their light from it, and the owner has no redress. If he builds and closes the windows of his neighbors, he will have no light for himself.

Æsthetic considerations, which will undoubtedly have more weight here in the future than they have had in the past, are set at defiance by present methods. Our street façades have a ragged, wild Western appearance, more suitable to a half-civilized community than to a city which claims rank with the other great capitals of the world. Great buildings, having one or two sides ornamented, rear their gigantic walls of naked brickwork far above adjoining buildings, and force their ugliness upon public view. Æsthetic morality requires that our streets of the future should have that sober, dignified and restrained aspect which comes of a uniform line. Only monuments and buildings of a public character, such as municipal buildings, churches, theatres and the like, should break the line of the street façade by going above its general height, and thereby obtain the setting and background which is their due.

My third proposition, though no less true than the preceding, may be more difficult to prove, for there is a widespread notion among those who have not given the subject study, that a limitation of height is all that is necessary without much regard as to what that limit may be.

In older countries, where cities have been built up solidly for centuries, this matter has been given most serious thought, with the result that everywhere a limit of six stories or less has been established as all that is compatible with public welfare.

In Paris, where the courts are generally of ample dimensions, the buildings are none too well lighted.

Our own experience with the new law tenements ought to show us that in districts solidly built up with buildings five or six stories high, 30 per cent. court area affords but indifferent light.

To permit the erection of buildings of even ten stories high is to set at naught the experience of the world.

Our tall buildings are replacing structures of very moderate height and dimensions, built when land was comparatively cheap, and whose builders did not seek to utilize it to the utmost. Our high buildings have heretofore been comparatively isolated in the midst of such surroundings, and consequently have generally had sufficient light. But as areas become solidly built up with them the case becomes entirely different. We are approaching the time when each building must depend on its own land for its light. Our experience of the past is not a safe guide for the future. We should look ahead. It seems to me that this is the crux of the whole matter.

Until we understand that a limitation of height to be

effective must be low, we will make no progress toward the solution of the problem. In time we shall be forced to acknowledge this fact whether we will or no, but in the meantime great and irreparable damage will be done. Why not look ahead now and see what ought to be perfectly plain; that buildings of even ten stories high in a district solidly built up with them will be improperly lighted unless the courts are made of an impracticable size. Is it good public policy to allow the city to be filled with rooms which must in the course of time be too dark for human habitation?

From a map recently published in the *Evening Post*, showing the area covered below Chambers Street by buildings of ten stories and over in height, I find that only 15 per cent. of the area of the land, exclusive of streets and parks, has been occupied by them. If this is correct, I do not see that any other proof is needed of the truth of my contention; however, I am not at all sure that our people can be made to believe it yet, still it is no less true for all that, and my argument is based on a knowledge of the fact that it is so.

Now let us consider my fourth proposition. Assuming that a limitation of height to be effective must be low, let me ask whether the establishment of such a limit would be in accordance either with good public policy or justice to those land owners who have not already built high buildings. I think not.

Our land values have been fixed on the basis of high buildings. To set a low limit of height now would be not only to greatly reduce the available area of floor space for the future, and so interfere with the city's growth, but to bring about a great shrinkage in values. Such a limit would also discriminate unjustly, and I think unnecessarily, against those owners who have not already built, and in favor of those who have built and preempted their neighbors' light.

Moreover, it is useless to discuss the fixing of such a limit at this time, for it would not be tolerated; it is, therefore, impracticable.

Now, if we admit that present conditions cannot continue; that a limit of height to be effective must be low, and that the establishment of a low limit of height is impracticable, we arrive at the conclusion that a *limitation of area must be established above a certain height*, and the only thing we have to consider is the details of the plan.

The plan I propose is simple, and I think it would be effective.

1. I would limit three-quarters of the area of every plot to a building height not to exceed once and a half the width of the street on which it faces, with a maximum height of one hundred feet.
2. I would have no limit of height for the remaining quarter of the plot, provided that no building or part of a building should be carried above the limit mentioned within a distance of the street façade equal to the distance of the curb from the building line.
3. I would allow of the purchase and sale between adjoining owners of the right to build high within the limit stated.
4. I would require that all sides of any structure carried above the limit of height should be treated architecturally, and that no wood whatever should be used in the construction of the entire building or its equipment.

Simple as this plan is, it will be seen that it over-

comes most, if not all, of the dangers, difficulties and injustices which have been mentioned in the preceding paragraphs.

I think the limit here proposed of once and one half the width of the street with a maximum of one hundred feet, is more than it ought to be, but I don't believe that any less would be acceptable. While this limit is higher than has been found advisable elsewhere, the exceptional purity of our atmosphere would seem to warrant a somewhat higher limit for New York.

This plan would protect the owner in his natural right to light and air. If only one-quarter of the adjoining land were occupied by high structures, little damage could be done him. If, on certain plots, a greater area were covered, the rights of adjoining owners would have to be purchased, and they would thus receive compensation for any injury they might receive. In any event no owner could be built in on three sides and be deprived of his light as at present.

By this plan there could be no possibility of a general conflagration spreading from building to building above the reach of the Fire Department, both because the high parts of the buildings would be too far apart to permit of it, and also because there would be nothing in them to burn.

The threatened congestion of the streets, if not averted altogether, would certainly be less likely to occur than under any plan for the limitation of height which is likely to be acceptable.

Light and air would be secured both for buildings and streets.

It would no longer be possible to build huge walls of blank brickwork, which one sees now on every side thrusting their naked ugliness upon public view.

Our street façades would assume that appearance of order and sobriety which comes of a uniform height and a continuous cornice line.

The sky line of the city, as seen from a distance, would assume a most picturesque, interesting and beautiful appearance.

Land values would be affected little, if at all, and the city would be assured of the greatest amount of floor area which can be had with justice to both public and private interests.

Finally, we should have a city unique in appearance and in harmony with modern methods of construction and vertical transportation; a city in which the elevator and the steel frame had been carried to their logical conclusion; a veritable City of the Twentieth Century.

This plan is based on the doctrine that owners should be given the greatest liberty compatible with the public welfare and private justice.

For that reason I would place no limitation on the area which may be covered below the limit of height. Owners always have left, and probably always will leave, enough space vacant to provide the necessary light where buildings are not too high, except for dwellings for the poor, and the Tenement Law provides for that. Neither would I make any limit for height on the unrestricted quarter of the plot; engineering and economic considerations will afford all the check necessary, and the restriction against placing the high part of the building within a distance of the front equal to that of the curb from the building will insure sufficient light for the street.

The liberty to buy and sell the right to build high between adjoining owners is in accordance with this doctrine; for it makes no difference to the public what part of any given area is covered by high buildings, so long as sufficient light is secured for the streets and the buildings themselves. Of course, if an owner sold his right to build high on one quarter of a plot in favor of an adjoining plot, his land would always be restricted to a building within the limit fixed. In granting the application to build, the authorities would simply consider the two or more plots as one for the purpose of the permit.

It is altogether probable that many owners would

never avail themselves of their privilege to build high on one quarter of their land, and would not care to sell their rights to do so to others. It might, therefore, be safe to allow owners to include one half the width of the street upon which the building faces as a part of the area upon which the unrestricted quarter might be based. This would operate in favor of corner plots, and give them the advantage which their more open situation warrants.

Many details of this sort would have to be considered if the plan were adopted, but the important thing to determine now is the correctness or incorrectness of the principle upon which it is based.

Italy to Protect Her Art Treasures

ITALY'S greatest asset is her art. This has attracted visitors from all over the world, but now it is realized that the splendid monuments reared during the past two thousand years or more are being slowly, but surely, despoiled to furnish decorative material for the houses and estates of the rich all over the world.

To those familiar with the many sales of spoils from churches, palaces, gardens and museums throughout Italy that have been held in this country alone, it would appear that there can be but a small proportion left.

That the Italian government has at last awakened to the importance of preventing further ravages, is shown by the recent enactment of a law that will prevent all future exportation of objects of art except with the consent of the government. Not only works of art, such as paintings and sculpture, are protected by this new law, but parks, gardens, fountains and forests are included in

the act and the "public enjoyment" of them must in no way be interfered with.

The passage of this law has, unfortunately, been too long delayed to prevent very serious inroads easily apparent to those familiar with Italian art, and to them the enjoyment of what remains is materially lessened by that which has been scattered throughout the world in modern gardens and private collections.

Knowledge of the money value of these art objects has excited the cupidity of dishonest people. During recent years very many valuable pictures have been boldly cut from their frames, and even the altars of churches and the apartments of palaces invaded in the search for spoil. To safeguard what remains, every portable work of art now in gardens and other places not easily guarded will be transferred to museums where they will remain under the protection of the government.

Recent Court Decisions

DOES "TOTAL COST OF CONSTRUCTION" INCLUDE DAMAGES FOR BREACH OF CONTRACT?

BOLLER v. CITY OF NEW YORK, SUPREME COURT, APPELLATE DIVISION, FIRST DEPARTMENT.

102 New York Supplement, 729.

The plaintiff entered into a contract with the City of New York, whereby he agreed to furnish plans and working drawings, with specifications, prepare for public letting and supervise the construction of the viaduct connecting Melrose and Webster avenues, in New York City, his compensation to be "the sum of 5 per cent. of the total cost of the construction of said viaduct. The plaintiff performed his contract, the work was completed and accepted by the city and the contractors were paid \$166,298.09. The plaintiff rendered a bill for 5 per cent. of that sum, which was paid, and which he receipted in full. Subsequently the contractors sued the city for damages for breach of contract, the city having failed to permit them to commence the work and carry it on at the time as provided in their contract, such delay causing them damage on account of the rise in price of granite and iron, and they recovered \$53,824.06. The plaintiff then

claimed 5 per cent. of this sum. His claim was rejected and he brought this action. The court held that the amount recovered by the contractors as damages was not part of the cost of construction on which the plaintiff was entitled to his percentage. Justice Houghton dissented, being of opinion that the city, by paying the judgment against it by the sale of bonds which it was authorized by law to issue for the building of the viaduct, treated the judgment as an addition to the cost of the structure, on which the plaintiff was entitled to his 5 per cent.

Where an architect has a right to enforce a mechanic's lien against a corporation for his fees and enters into a written agreement along with the corporation, the building contractor and a person who is to take bonds about to be issued by the corporation, in which the contractor binds himself to pay the architect's claim, and he and the architect agree to release their liens, the architect cannot afterwards enforce a lien against the corporation for the amount of his claims.—Wyss-Thalman v. Beaver Valley Brewing Co., Pennsylvania Supreme Court, 65 Atlantic Reporter, 811.

Union Trust Building, Washington, D. C.

MESSRS. WOOD, DONN AND DEMING, ARCHITECTS.

THIS building, the new home of the Union Trust Company, was approved at a meeting of the Board of Directors of that company in May, 1906. The working drawings, which were made by the architects, Wood, Donn & Deming, in sixty days after the preliminary drawings were prepared, were used without a change to complete the building.

It was the original intention of the architects to use marble in executing this design, but on account of the great increase in cost over granite, a light shade of the latter stone was selected from the quarries at Mt. Airy, N. C. Although the new structure covers broad frontages on both streets, over fifty feet on H street and three times that on Fifteenth street, the size of the building as seen from the street is only about one-half of its actual size, as the area that is covered includes an L, which extends back from Fifteenth street about one hundred and forty-five feet.

The design of the new structure is classic and the aim is to show by its substantial construction and simple lines and freedom from unnecessary decoration, the important character of the business which is carried on within. The principal feature of the two fronts is the colonnades of massive columns five feet in diameter. This colonnade extends through five stories, the pillars ending in capitals Corinthian in design and supporting an entablature with a frieze and decorated cornice. Above is an attic story. The foundation for this portion of the building consists of a mezzanine story and the principal first story, both of which are entirely plain in design, as are also the cornices which mark the separation of the architectural divisions.

The first story, in which is located the banking offices of the company and also a real estate office, is indicated by the arches on the first story with the square windows above the arches expressing the clear story of the banking room, while the columns above express the office building. There are entrances to the banking room, both on H street and Fifteenth street, and further south on Fifteenth street is the entrance to the elevators and staircases that give access to the upper stories of the building, arranged for office uses. Still further to the south and near the extreme corner of the building is the entrance to the offices on this floor. The latter extend to the rear, occupying the space in the L.

The banking room, with its lofty ceiling and its spacious approach, is well lighted and conveniently arranged for the transaction of the details of the business of the Trust Company. The safe deposit vaults and boxes are on the same level as the banking room, and are well lighted by skylights placed in a barrel vaulted ceiling.

It was the purpose to make this building not only an ornament to the city, but one that would be so conveniently arranged as to be well adapted for the business of the company. There is ample room for the clerical force as well as for customers not only at the present time, but the future, as sufficient provision has been made for growth.

The work was first started on the building about the first of November, 1906, and was completed and accepted about the first of December, 1907.

The entrance lobby is entirely in white Norwegian marble with the exception of panels which occur between the pilasters and above the high wainscoting. The marble pilasters support a doric entablature, richly relieved in dull gold and color. All the metal work in this lobby, the elevator grilles, directory board, etc., are finished in MacMonnies' bronze. The lantern and wall brackets are executed with the same finish.

The marble stairways start at either side of the entrance vestibule and meet at a landing directly over this vestibule, and thence lead to the second floor. The stairway is merely an emergency feature as the building is equipped with three elevators.

The level of this entrance lobby is the same as the offices of the Real Estate Company, but the door of the banking room is on a higher level.

Going up the five steps and through massive bronze gates you enter the lofty banking room of the Union Trust Company. This room is fifty by one hundred feet and thirty-three feet high; the treatment of the color and the introduction of columns carrying the clear story makes the height appear much more than it actually is. The building has gained everything in scale and lost nothing in refinement, because the structural parts are large and simple and the ornament small and refined; this with the quiet color scheme gives needed repose and scale. The columns in the banking room are of green Vermont marble and give the color note to the scheme of treatment of this room, which is white and green; the white being gotten from frankly painting the plaster walls a little warmer tone than plaster and only putting the ornamentation in the ceiling. The ceiling is richly decorated with cofferings, and great bronze drops at the intersection of the beams suggest the means of supporting it from above.

The plan of this room was suggested to the architects by the Basilica of Santa Maria Maggiore in Rome, while the general architectural treatment with the attic clear-story is modeled somewhat after the large room in the Palace of Pietro Massimo in Rome. The remarkable feature of this room is that it is so light. Very few examples of lofty banking rooms, on top of which are placed tiers of utilitarian offices of a modern skyscraper, are to be found which are not dark and have to be lighted artificially. This is the unique feature of the plan of this building.

With the exception of the Norwegian white marble used in the banking counter screen, the marbles throughout the building are of native varieties. The floor space is divided in the middle by the public space and is approached by the public at either end.

The safe deposit department and vaults are on the same floor level, a feature which few banks and Trust Companies possess, and should recommend itself to the public for its ease of access and completeness of appointments.

The ladies' department is near the H street entrance, and has a separate teller's window for their use. It is screened off in glass to separate it from the public space and thus gives a degree of privacy which is necessary.

The upper stories above the bank floor contain one

hundred and seventy-five office rooms averaging 16' x 18' in size, and all provided with direct outside windows, as no room opens on a court.

A toilet for men is provided on each floor, and a toilet for women on each alternate floor. All toilets have tiled walls and floors and marble partitions.

The halls and corridors in the office part of the building having granolithic floors and marble bases.

The building is equipped with electric elevators, electric lights, private telephones to each office room, steam heat, direct for office rooms, and direct-indirect for banking room.

New Masonic Temple, Washington, D. C.

MESSRS. WOOD, DONN & DEMING, ARCHITECTS.

THE classic style of architecture employed in this building is that on which the Temple of the Ancients reached its greatest beauty and highest development.

The peculiar shape of the site made it possible to impress on the shortest but most important façade, facing fifty feet and eight inches on Thirteenth street, the character of the temple so that the most ignorant might, without inquiry, know its purpose. The sides extending down New York avenue one hundred and thirty-two feet and six inches and H street one hundred and forty-four feet and three inches, respectively, are a continuation of this Thirteenth street motive, but here the windows are made much more archaic in character, and by their shape, size, and disposition lend mystic character to the structure.

The building will be six stories high, with the first story about thirty feet in the main auditorium, the total height being one hundred and ten feet above the sidewalk, the greatest height allowed by law on this site. It will be heated by steam, and have a special system of ventilation for the auditoriums, banquet hall, lodge and locker rooms. The structure is to be fireproof throughout, with steel-frame construction. The exterior walls, however, will be self-sustaining. The auditoriums and lodge rooms are to be practically free from columns with fifty-foot plate girders spanning from wall to wall.

The massive Indiana limestone base of the building is heavily rusticated. The principal entrance is marked by a large semi-circular opening or doorway to distinguish it from the rectangular openings on the sides, which merely are entrances and exits to the auditorium.

The colonnade of the superstructure is flanked at either end by heavily rusticated piers, which complete that part of the composition.

An attic crowns the building with a balustrade on top to give scale to the whole.

The whole composition is designed for a light-colored material. The base will be of limestone. The cornice and other architectural features, such as the caps and bases of pilasters, trims about windows, and the columns and balustrades, etc., will also be of limestone or terra cotta to match in color, while the main body of the whole will be of a selected gray brick, pleasing to the eye and in perfect harmony with the limestone trimmings.

The main portion of the basement and vaults extending out under the sidewalks on three sides of the building, will be devoted to an immense banquet hall, seating about eight hundred people. This room is readily accessible from the main auditorium room on the first floor, and by stairways and elevators from any of the lodge rooms.

In connection with the banquet hall are two entrance halls with toilet for men, and toilet and dressing room for women, and coat and hat room. The service part consists of a large kitchen, storeroom and service-room or pantry.

Supplies can be brought in direct to the kitchen from the sidewalk.

The power part of basement consists of boiler and pump room, elevator machinery, coal vaults, and fan room for supplying fresh air to the banquet hall.

On the first floor is a large auditorium, practically at sidewalk level, occupying almost the entire floor. This auditorium with gallery will seat almost eighteen hundred people and carries out all the requirements of the District of Columbia government for the prevention of fires and casualties from false alarms and panics. The room has been designed as a music hall, and will have a grand organ for choral society or oratorio concerts as well as for largely attended Masonic rites.

An especially fine floor has been provided in the auditorium for dancing, and when balls are given the banquet hall can be used as a supper room, with separate stairways, dressing, coat and toilet rooms located in the basement.

The auditorium will be well provided with exits directly to the sidewalk. Practically it has an entrance at each of its four corners. Access to the auditorium can also be had from main entrance lobby of Temple by Masons on occasions when auditorium is used by them. There will be a large entrance lobby, with two elevators and stairway, which repeat on each floor. The lobby in every case is made quite architectural, as it is the public part of each floor.

Second and third floors will be given up to the Blue Lodges. There will be four lodge rooms, with preparation and ante-rooms to each, together with committee rooms required, and offices for the use of grand officers.

There will be a library on third floor in addition to the rooms described above.

The fourth floor will be devoted to Knights Templar, with Asylum and Commandery, and ante-rooms. Locker space will be provided for eight hundred lockers.

The fifth floor will be for the Scottish Rite, with lodge rooms, preparation room, ante-rooms, and an auditorium with gallery and stage. This auditorium is intended to be used by both the Scottish Rite and the Mystic Shrine, which occupies the sixth floor and seats about seven hundred in floor and gallery.

It is intended to have the stage so arranged that the most elaborate services of the Scottish Rite can be given in their entirety, with the ninety-nine sliding scenes required.

There will be storage rooms on either side of the stage on the fifth and sixth floors.

The Mystic Shrine will occupy the sixth floor.

The Arab Patrol and the auditorium may be reached from the gallery by a liberal stairway to the fifth floor.

Space provided for an organ in gallery opposite stage. Every floor has its toilet rooms.

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Detail of Entrance and Interior of Banking Room, Union
Trust Co.'s Building, Washington, D. C.

THE demolition just begun of the Madison Square Theatre and the Fifth Avenue Hotel in New York marks the passing of two of the city's historic buildings. The Fifth Avenue Hotel, erected in 1859, has sheltered many celebrities in its day, and has furnished the setting for famous scenes of both social and political significance. In the corridor of this hostelry was located the so-called Amen Corner, renowned as the seat of Republican authority in the State for a generation. While many more pretentious hotels have been built of late years, offering perhaps greater conveniences, the Fifth Avenue succeeded long in retaining its place of usefulness and prominence. Its removal will deprive that section of the city in the vicinity of Madison Square of one of its most conspicuous and dignified landmarks.

APROPOS of the general subject of competitions which has occupied so much space in British architectural journals of late, is an article appearing in a recent issue of *The Building News* of London. The

plan suggested, admittedly not a new one, contemplates the appointment of official assessors or judges who shall regularly conduct competitions, and make the awards. It is pointed out that these judges should be selected from among non-practicing architects; men who, although trained and experienced architects, have retired from active practice for one reason or another and yet are recognized as men of sound judgment and good taste. It is submitted that if judges were thus nominated to deal with public competitions, they would not fail to enforce the most stringent conditions of competition, and would ere long become experts in their calling, and in a sense immeasurably better qualified for their work than the comparatively amateur judge who perhaps has only acted in such capacity upon one or two occasions during his entire career.

THE scheme as presented has for its apparent object certain commendable reforms, not the least of which would seem to be the possible elimination of a tendency to pander to known idiosyncrasies of the practicing architect who has been chosen to act as judge of any given competition. It is common knowledge that if certain prominent architects are to act as judges of a competition, it would be folly for a competitor to submit a design embracing certain features, while if certain other equally prominent practitioners were to make the award, it would be as great folly to omit them.

BUT just how the selection or appointment of official judges, even though they be from the retired lists, would correct this evil, is not quite apparent. For necessarily these judges would be men of reputation and attainments, and although not actively engaged in the practice of their profession at the time of appointment, their work would be well known and consequently their architectural proclivities. But even if they were perchance unknown in the beginning, it would seem probable that by the time an enviable skill in his work had been acquired by the judge, the observing competitor would, by a study of the awards made, have completed a tolerably accurate estimate of his propensities for certain treatments, and again our architecture would suffer in an effort to make a design fit a known predilection.

SOME features of this plan which do not appear entirely developed are the method by which the proposed judges shall be chosen, their tenure of office, scope or field to be covered, and manner in which the acceptance of the scheme shall be secured from all parties concerned. On the whole, it would seem that while the present method of judging competitions, or in fact of handling the entire subject, can scarcely be called ideal, little if anything would be gained by entrusting the work of assessing the drawings submitted to judges chosen from among the superannuated or even unemployed members of the profession. The subject is one upon which we have heard many expressions of opinion, the majority apparently favoring judgment by a jury of practicing architects of known constructive and artistic ability, in preference to any single assessor or a board of assessors possessing perhaps a preponderance of theoretical knowledge.

THE AMERICAN ARCHITECT

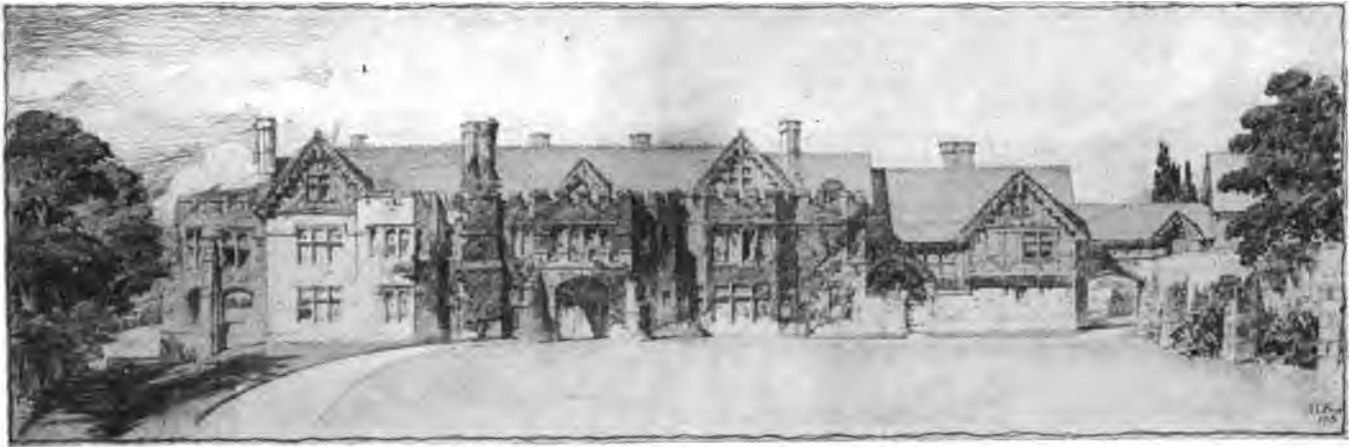
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SKETCH FOR RESIDENCE OF WILLIAM C. SCOTT, ESQ.
Price & McLenahan, Architects.

Exhibition of the T Square Club and Philadelphia Chapter of the American Institute of Architects

LET the critic who rails at the architect who insists on dominating his work, or the captious one who disputes the architect's right to a place as an artist, a creator of the beautiful, visit the fourteenth annual exhibition of the T Square Club, and Philadelphia Chapter of the A. I. A., now open in the galleries of the Pennsylvania Academy of the Fine Arts in Philadelphia.

Let him carefully go over this exhibition of recently completed work and of competitive plans. If he does not revise his ideas and concede that there is a great and steady movement towards the good in architecture, if he fails to acknowledge that the modern architect, as represented by this exhibition, is master of his art, let him take himself and his pessimistic atmosphere out of the ken of men who know. There is no place for him here.

It is not remembered, when, if ever, an architectural exhibition has had a surrounding that so rigidly tested its merits as does this present one. To better illustrate this, let us study for a moment the accompanying plan of the exhibition.

Through the centre of these long galleries, approached by a wide stairway, one reaches the exhibition. Differing from those of recent years in other cities, the visitor is not greeted at the outset by a riot of color furnished by the mural decorator, or the grouping of sculpture. He finds himself in an architectural exhibition of plans, drawings and photographs. While the latter dominate, they are in no greater proportion than in other archi-

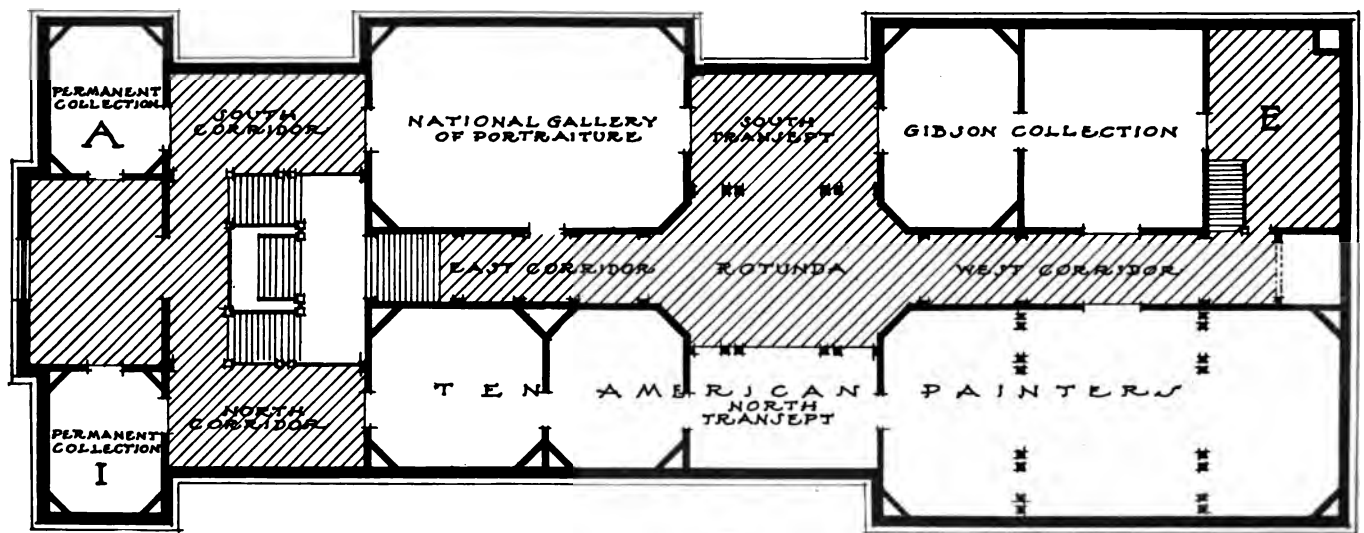
tectural displays. There are also to be seen in the long gallery, models of projected buildings. At left and right, through arched openings, a glimpse is had of the side galleries, and in the gallery marked "E" is grouped the students' work. There is yet no hint of the mural painter, and it is necessary to pass through galleries C and D, devoted to the Gibson Collection of Paintings, and thence to the south transept, where the visitor again finds the architectural exhibition. From here, through the National Gallery of Portraits, one reaches the south corridor, where is displayed cartons for stained glass and decorative motives for architectural purposes.

From this corridor one wanders into Gallery A, where is hung part of the permanent exhibition of the Academy of the Fine Arts, into the central gallery "K," to be once more greeted by the "T Square" exhibition, and thence through "I" to the north corridor, where the mural painters hold sway, and where the wealth of color is beautifully arranged. And from this point the entire length of the long north galleries is given to the exhibition of "Ten American Painters." These men, known wherever good art is referred to, are Frank W. Benson, William M. Chase, Joseph DeCamp, Thomas W. Dewing, Childe Hassam, W. L. Metcalf, Robert Reid, Edward Simmons, Edmund C. Tarbell, and J. Alden Weir.

It will be conceded that any architectural exhibition that can hold its own in the centre of such artistic surroundings must be worthy of notice. It does this. More,

it emphasizes the high merit of this collection. There are no doors to break the view, or to isolate the exhibition of the T Square Club, from the several picture

faction to see it demonstrated that an exhibition of the work of the artist architect can so fittingly be shown side by side with that of the artist painter.



• SHADED PART SHOWS T SQUARE EXHIBITION •

collections that surround it. A series of arches admit a vista that makes it possible from all points to see the length and breadth of the building. So well has this

This opinion is shared by all visitors to the exhibition, who without exception, when discussing this novel grouping of exhibits, expressed both surprise and admiration.



GIRARD TRUST CO.'S BUILDING, PHILADELPHIA.

Allen Evans and McKim, Mead & White, Associate Architects.

exhibition been selected and hung, that one feels no sense of contrasts in passing from the galleries of paintings to those devoted to architecture. It is a source of satis-

that a venture, which, when first discussed, seemed so fraught with danger, should have proved so very successful.

Results like this are not by chance. They can only be acquired by painstaking effort and much labor and personal attention on the part of committees. However, the result is their reward. We do not believe



DOORWAY, WASHINGTON UNIVERSITY, ST. LOUIS, MO.
Cope & Stewardson, Architects.

that in the entire exhibit can be found a discordant note that could have been avoided.

Usually it is customary to particularize when describing similar exhibitions. But this of late years seems to be unnecessary. Particularly is it so in this instance.

Juries, naturally, with the success of exhibitions close to heart, do not admit poor material, nor will they countenance mediocrity. The outcome is a harmony of result and a display of the best that has been accomplished in the different fields of effort. The study of the different exhibits of architecture shown becomes interesting, not to sift out the conspicuously good, but to note the individuality of the work of different men in the same field of endeavor.

This exhibition emphasizes, as did that of the Architectural League, recently held in New York, that it is in the field of domestic architecture that most originality is shown. The city and suburban house is here presented in varying forms of excellence. From the modest country house to the pretentious mansion, the centre of a large estate, the architect, with that development of keen artistic perception more apparent with each succeeding year, has learned to design his houses to fit their surroundings, and to select his material so as to complete in form and color an ensemble that leaves nothing to be desired.

Nor is this entitative power entirely confined to the class of architecture above mentioned. One notices throughout this exhibition that due regard for proprieties exists. The sanely-planned buildings, denoting in their well-proportioned façades the logical mind guided by the best standards, do not strive after individuality at the expense of good architectural construction. To prove our contention we present to our readers illustrations of this exhibition, which absorb all the available space in this issue. A careful study of these will, we believe, show that this exhibition of the T Square Club and Philadelphia Chapter deserves every good thing that has been said of it.

No part, however, of the students' work have we been able to illustrate. This is grouped in a well-lighted gallery and is worthy of the close study that is given it by the many visitors to the exhibition. The schools represented are the T Square Club, Atelier of the Pennsylvania Academy of the Fine Arts, the University of Pennsylvania and Cornell University.

Mr. William E. Grober, winner of a travelling scholarship, has contributed a number of interesting sketches made abroad. These are delightful bits in color and in black and white, picked up in different cities of Europe.

No. 211, done at Palsette, Tours, and No. 212, a sketch of the temple of Castor and Pollox at Girgenti, Sicily, are worthy of particular mention. Another holder of



DOORWAY, WASHINGTON UNIVERSITY, ST. LOUIS, MO.
Cope & Stewardson, Architects.

a traveling scholarship, Mr. George S. Idell, contributes a series of water-color sketches, indicating a good grasp of the beauties of his subject, combined with a technical knowledge of the possibilities of his medium.

Cornell University is represented by the work of four students. The subjects treated are a thermal establishment, a Protestant Episcopal church, and a club house for an art society. One looks in vain through these for



LIBRARY, 131 E. 66TH ST., NEW YORK, N. Y.
Charles A. Platt, Architect.

the elemental treatment so usual in student's work, and cannot fail to acknowledge the value in the formative stage of well-directed instruction.

Equally satisfactory is the work of the Architectural Department of the University of Pennsylvania, represented by nine students. The subjects presented by this school are greater in number than those of Cornell, and fewer in each class. A swimming pool out of doors is well handled and the various renderings show training and ability.

An interesting feature in this room is the entries for the Walter Cope Memorial prize. The program of this, the fifth competition, was a monument at the entrance of a harbor. The designs submitted were of so high an order that the jury of award found their duties arduous. The award was to Mr. Grant M. Simon, whose design, a dignified and well-proportioned result, is illustrated in this issue.

The galleries set apart for the display of cartons and motives for architectural decorations are well arranged, as is also that on the opposite or north side of the galleries, where the mural paintings are exhibited. These have been hung with a due regard to their color combinations, and the result is very good.

In our notice of the exhibition of the Architectural League of New York mention was made of the necessity for a building large enough to house our fine art societies, with ample space for permanent exhibitions, now only found in museums and club galleries.

One comes away from this exhibition of the T Square Club convinced of this need and doubly convinced of the right to a well-selected, permanent exhibition of architectural work to claim a place in such a building. This is conclusively proven, and those in charge of the Philadelphia exhibition are, we believe, entitled to the gratitude of the entire profession for having undertaken a task that many felt sure was doomed to failure, but one that has so splendidly proven the accuracy of their judgment.

Life at the Ecole des Beaux-Arts

Reprinted from the *Technology Architectural Record*, by permission of the author.

MR. J. RANDOLPH COOLIDGE, JR., of the firm of Coolidge & Carlson, recently gave a smoke talk on student life at the École des Beaux-Arts in Paris. Mr. Coolidge took the two-year course in architecture at the Institute eighteen years ago, and upon its completion went to Paris. Then, as now in a greater degree, American students in their search for the highest and finest artistic architectural training were going to Paris in considerable numbers, and finding what they sought in the spirit and enthusiasm of the École. To many, at first experience, the École seemed to be managed in a very haphazard and inefficient way. Examinations were held twice a year, though not at any specified time. Standards for admission seemed to vary in an unaccountable way; at one period eighty-three students were admitted, and at the next out of a similar number of applicants of ap-



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Charles A. Platt, Architect.

parently equal merit only twenty-nine passed. All foreigners were freely admitted to the examinations.

When Mr. Coolidge first went to Paris there were forty or fifty Americans preparing for entrance, and

twenty or twenty-five already in the school. These numbers were small compared with the hundreds of American students studying painting and sculpture. In later years the increasing number of foreigners, notably Americans, threatened to overcrowd the ranks at the expense of the French students, and a rule was made limiting the number of foreigners that might be admitted at one examination. Any man under thirty years of age could apply, and if he failed of entrance he might try again any number of times. Some candidates, with the French love for titles, wrote the words "élève aspirant" after their names, and with many unfortunates it was a tag that existed for years.

The examination seemed more or less haphazard. Considerable knowledge of design was required. One unsuccessful American applicant who went away belittling the importance of this test was discovered to have been guilty of placing a column on axle under a pediment, and his opinion correspondingly discounted. The "élève aspirant" might prepare for his exams either by going into a strictly preparatory atelier, where he was rigorously crammed with just the requisite knowledge, or in a less direct and speedy manner by going into the atelier of some prominent patron, where he went through an apprenticeship period of pounding glue, stretching paper, running the charette, and fetching drinks before reaching the point where he could do serious work. As the "*dernier nouveau*," the chances were that he would have to go through an initiation of a more or less unpleasant character.

His examination successfully passed, the student found himself a member of the second class. Here again to an American student there seemed to be a great lack of system, but he soon discovered that what the school lacked in formal and visible organization was far more than made up for in the high character of the instruction

and admirable *esprit de corps* among the fellows. To the American the French student is hard to understand in many ways. Though in some respects less sophisticated than an American student of equal age, in other ways his view of his life and work is much more mature. Perhaps one of the greatest points of difference is the minor regard the French student has for time. The American spirit of accomplishing a maximum of work

in a minimum of time is absent. This prodigality of time may be partially explained by the small cost to the student of instruction and living expense made possible by a government school; but lying deeper is a realization of this fact—results in architecture that will stand the test of time come from a slow and gradual ripening of faculties and ideas, and not from the completion of a prescribed programme of set exercises. The completion of the course is not a matter of time; it comes only upon the receipt of a specified number of values for mentions awarded, and may require years of repeated efforts.

The first problem is an elementary one involving the orders, requiring no great tax upon the imagination. Everything in the school is made incidental to design. Work in descriptive geometry, construction, archæology, and allied subjects is done away from the atelier; there are a few set lectures, and at most of them attendance is optional. All work in design is based upon the "*esquisse en loge*." The student going to his first "*en loge*" enters a great barn-like, comfortable building, divided into a great many small pens with windows. For a large part of the day the fellows do not take things very seriously. They are not confined in their respective pens, but pass the time o' day outside, with considerable visiting around, singing, scattering lunch debris, delighting in confusion in general. Towards evening work becomes earnest, and by the light of two candles every



DESIGN FOR STAINED GLASS—VIOLET OAKLEY.

man works his best till the janitor clears the building at nine o'clock. The new student goes away wondering if he has really accomplished anything and anticipating a thorough tearing to pieces of his scheme by the first-class



"COGSLEA," CHESTNUT HILL, PA.
Frank Miles Day & Bro., Architects.

men the next day—an anticipation that is always realized.

Two months are allowed for working up the problem. Nothing is done of any consequence the first month, but all the real work is left till it has to be done. The student spends most of his time during the first month in working for the first-class men, knowing that favors will be reciprocated later on. He is held strictly to his esquisse, the importance of which is emphasized as showing his initial grasp of the problem. Even if his start is bad he must stick to it; the idea is developed that one may learn just as much from a bad start as from a good one, and that the experience gained by learning from one's mistakes is a valuable one. The first-class men are liberal with criticism; when a thing is very bad they frankly tell one so, but at the same time try to show the best that can be made from it. As the day set for completing the problem approaches the men work practically night and day, and at the last receive valuable aid in the way of finishing touches from the upper men. The drawings are hung, and after a week or ten days the jury of the École inspects them and awards mentions. When the doors of the exhibition hall are opened the men rush in to learn the results, and there is in each atelier a celebration, the liquid part of which is furnished at the expense of the lucky winners.

After winning a certain number of awards the student becomes a member of the first class. Promotion is made a matter of accomplishment and not of time. Practically

the only restriction as to age is that a man may not compete for the Prix de Rome after he is thirty years old. Many men after receiving their diploma go out for a few years of practical experience before trying for the Grand Prix.

While in the École the student feels himself to be an integral part of the student body; while to-day a "*dernier nouveau*" he can look forward to helping initiate the next lot of new arrivals before long, and later still to the dignified position of a first-class man, where he may become a warm friend of the patron himself, and help him render his drawings in some big competition. Once a year a dinner is given, called the patron's dinner. The entire atelier goes to some restaurant—a better one perhaps than the fellows usually patronize—and the patron presides. It is a very friendly occasion, and everybody has a good time. The "*dernier nouveau*" is usually called upon for a speech, though it makes little difference what he says; for after his "*Monsieur le Patron, Messieurs*" comes a loud and continued burst of applause that drowns the rest of his remarks. There are other opportunities for good times in the course of the year. Excursions to many of the beautiful picnic spots about Paris are popular. The French students have no fondness for set games or amusements of any kind, and there are no forms of athletic contests. After the patron leaves the fun becomes much more free and noisy. Some features might easily shock an Anglo-Saxon student, and it takes time for him to adjust his idea of conventionalities to the French student's standard. Without condoning the extremes to which their ideas of fun may carry them, it is at the same time true that they can touch certain kinds of pitch without the degrading results that might be expected, and that their high-minded attitude towards their art and their capability of doing great things are not impaired.

Their attitude toward public affairs has to an American—they call us "*les sérieux Américains*"—a large degree



DECORATIVE FIGURE BY H. HONLEY PARKER.

of indifference. While Mr. Coolidge was at the École President Carnot was assassinated, and the apparent *insouciance* with which the news was received was striking, especially when one thought of the commotion that a similar event would have produced at home. The

gist of the matter is that for the average student the school is everything, and its atmosphere and activities make up his life.

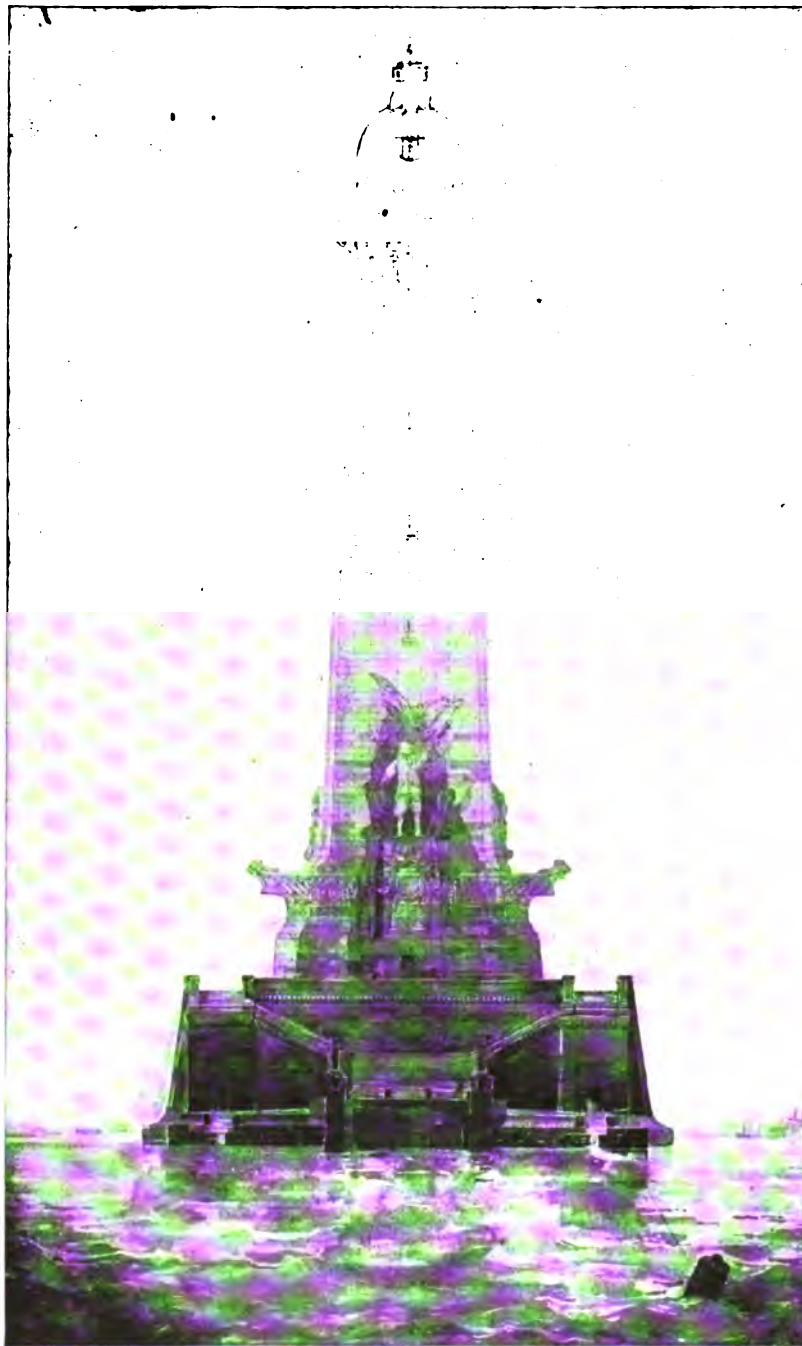
The great goal towards which every Frenchman looks forward is the Prix de Rome. The competition is keen, and one must have decided talent to win, as there are from seventy-five to one hundred men in the first class. As every one knows, the winner goes to Rome and lives and studies for four years in the Villa Medici, the property of the French government. For many years a very pretty custom was observed in introducing the latest arrival in his new home. In early days stage-coach arrivals always reached Rome towards evening and it became a tradition that he be met at a little inn outside the city by the students already at the Academy. They conducted him the rest of his journey through dark and obscure side streets, and introduced him into the Villa by a shabby back way, all the while pointing to the dingy walls and dwelling upon the splendors and glories he was entering upon. He tried his best to assent to their enthusiastic exclamations, but when they had left him for the night in his room facing the west the chances are that he was a rather dejected and bewildered student. But in the morning a great awakening came to him; the Villa crowns the Pincian Hill and faces the panorama of the Eternal City, with the great dome of St. Peter's as its focal point. As he looked out upon the Villa garden and this magnificent view there suddenly rushed over him a full realization of the beauty and richness of the life he was entering upon. The influences of such an environment, added to the association with the most talented and brilliant younger architects, sculptors, painters, and musicians of France, leave an impress upon the personality that lasts for life.

After his return to Paris the architect often enters upon a long period of waiting before a large opportunity comes to him. He is granted some minor position under the government, with a pittance of a salary, such as architect of the Obelisk in the Place de la Concorde, of the Colonne Vendome, and of the Arc de Triomphe, and his work for some time may not be much more than superintending repairs to those monuments. The distinction

of having won the Grand Prix bars him from much minor practice, and it is his constant hope to receive some big government commission. Bénard, whose winning design for a Palais des Arts was copied at the Chicago World's Fair, found his first big opportunity in the Phœbe Hearst competition for the University of California some twenty years after his return from Rome. Though his scheme is not to be carried out, he has found a commission suited to his talents in the great Federal Palace in the city of Mexico, which promises to be one of the most magnificent parliamentary buildings of the world. Coquart, another Grand Prix winner, found his opportunity in a ceiling for the supreme court in Duc's Palais de Justice at Paris; but unfortunately, after working upon it for seven years, even the French government thought this progress was too slow, and he was relieved of his commission.

In a way all this is characteristic of the French architect; he

waits for a good job and then takes a long time doing it. Time is secondary; feeling is everything. When an architect has once worked upon a building in a degree it always belongs to him thereafter. Garnier had an office in the Opera till his death, and then the building was placed under one of his pupils' charge, so that no alterations foreign to his spirit might be made. This is also true of Nénot and his work on the Sorbonne.



A MONUMENT AT THE ENTRANCE OF THE HARBOR.

Design submitted by Grant Simon, winner of the Walter Cope Memorial Prize, 1908.

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A. I. A., 12 pages.
- Society of Beaux-Arts Architects—Student Work—8
pages.

DURING the past decade the general public of Philadelphia and architects throughout the country have learned to anticipate with liveliest interest the annual exhibition of the T Square Club and the Philadelphia Chapter A. I. A. That this feeling of expectancy is fully warranted will not be denied by anyone who is familiar with previous exhibitions, and unquestionably the one now being held will serve to fix a new standard of excellence. A fair estimate of the character of the work shown can be gathered from the illustrations of a few of the subjects presented on other pages of this issue, but a full appreciation of the value and interest of the exhibition can only be gained by a personal visit to the exhibition galleries.

IT is quite probable that to the architectural student and the practicing architect both the interest and worth could have been considerably augmented by a more rigid adherence to the terms of the program of exhibition, which provided for the complete presentation wherever practicable, of individual subjects. But if, as many contend, the true function and object of the exhibition is to interest and educate the public, the entire scheme, plan, scope and setting, of this exhibition would seem to have been happily conceived and admirably accomplished.

IN this sordid day and generation with the struggle for wealth, for position, for power on every side, when selfishness has become so universal that even the philanthropist or man of means is suspected of ulterior motives when bestowing his benefactions, when almost invariably a gift calls forth a suggestion of "conscience money," or an interrogation as to the source of the donor's wealth, it is heart-warming to contemplate an instance of the most unselfish sacrifice of time and money by men, many of whom are far from independent financially. The New York Society of Beaux-Arts Architects, through the ability and devotion of its officers and leading members, who give unsparingly and without price of their time and money, has not only enabled hundreds of architectural draughtsmen and students throughout the country to attain a degree of efficiency and skill they would otherwise never have possessed, thus immeasurably bettering their condition and aiding the cause of architecture, but it has placed a liberal education with the advantages of travel within the reach of many.

IT is natural enough that we should regard with greatest appreciation those acts and deeds which command our daily attention, and the results of which we know to be neither fortuitous nor ephemeral, but viewed as nearly as possible without prejudice we are persuaded that, taken all in all, a more unselfish, commendable, and withal greater work than that being done by this society has not been undertaken, and it is therefore with unusual satisfaction, as being able in a small way to contribute to this work, that we make the announcement appearing on another page of this number.

WHAT would appear to be a somewhat anomalous position has lately been assumed by a principal of one of the older schools in Greater New York. According to press reports, he has asserted that the old wooden two-and-a-half story portion of the building would be safer in the event of fire than the new modern fireproof wing just completed; for while admitting that the wooden building would burn like tinder if once kindled, he maintained that since the building was plentifully supplied with windows there would be little or no danger to the pupils, his idea apparently being that they might safely jump to the ground. We confess that to us the thought of a throng of school children jumping, falling and being crowded out of the second story window of a fiercely burning building by their panic-stricken mates behind them is not a pleasant one, nor one that we believe will readily commend itself to the pupils' parents.

PENURIOUS and doubting guardians of city exchequers everywhere might profitably read and ponder the news recently received announcing that the authorities of Paris were preparing to expend a sum equal to one hundred and twenty millions of dollars for beautifying and improving the city. That no city in the world is better qualified to judge all matters relating to the value and benefits accruing from civic improvements will be readily admitted, and when after all the time and money that has been expended heretofore in the beautification of the city, the enlargement of the work to almost gigantic proportions is thus taken up without opposition or adverse comment, there can be but one explanation.

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No. 1688.



PEDIMENT OF KENTUCKY STATE CAPITOL.
C. H. Niehaus, Sculptor.

The National Sculpture Society's Exhibition at Baltimore

IT is not more than twenty years ago that many sculptors in America found that to earn a living by the practice of their profession and receive recognition at the hands of the public was practically an impossibility. What the sculptor modeled he could find no place to exhibit. In none of the annual exhibitions of paintings was there a department set aside for sculpture.

While small work might perhaps have been admitted and set in obscure corners, there was neither space available nor disposition shown to accord such privileges to the sculptor who desired to show his work.

Struggling under these adverse conditions, deploring the lack of appreciation of plastic art on the part of the general public, it happened most appropriately that a knot of men gathered together in a certain bronze foundry in New York City, early in the spring of 1893, decided to no longer be regarded as intruders, to be looked at askance when they asked for the recognition they knew was due them. The idea expressed found ready support, and it was decided to band together for mutual aid and encouragement, and not seek to gain admission to the open field of art through the patronage or grudging consent of other organizations. It

was in this manner the National Sculpture Society of America came into existence.

On May 30, 1893, this society was founded, and the ready support given to the new organization by sculptors everywhere was so assuring that in less than three years its future was made certain, and in 1896 the society was incorporated.

The ready support accorded to this movement, the reversal of opinion that had already taken place, and the willingness now shown to concede to the sculptor his rightful place in the field of art, is evidenced by the names of the first officers elected by the society.

They were as follows: President, J. Q. A. Ward; Vice-President, Charles DeKay; Second Vice-President, Charles R. Lamb; Treasurer, J. Wyman Drummond, and Secretary, Barr Ferree.

From that time to the present the growth of this society has been steady and consistent. It is the recognized organization in this country. The present membership is ninety-one sculptors and upwards of two hundred lay members. Its position to-day as an art organization is assured and unassailable, and its influence is recognized in the uplifting and conserving of good sculpture in America.

Since its incorporation the National Sculpture Society has given several exhibitions, and it has on numerous occasions, acting as a society, contributed the best efforts of its members and its official supervision to some of the most important works erected. Of these, the Dewey Arch in New York City, the sculpture of the Pan-American Exposition at Buffalo, and the St. Louis Exposition are most prominent. On these occasions the selection and designing of the sculptured features were governed by the National Sculpture Society, for by reason of its exhibitions, guiding the public taste in the right direction, and proving its claim as a representative body, it had compelled just recognition. So fully has this right as a national representative body been recognized, that many of the most important competitions for public work have been outlined as to programme and judged by this society.

To set these down in detail would be to compile a list

good sculpture, and to foster a taste and an appreciation of these ideals. With this object in view it has held numerous successful exhibitions, heretofore always in New York City. But as its organization is national and its object not to localize the interest in good art, it was decided to hold exhibitions in other cities from time to time. It was in harmony with this decision that the invitation of the Municipal Art Society of Baltimore to present the work of members of the society in that city was accepted.

The National Sculpture Society has endeavored in its contribution in response to this invitation to show the steady advance of sculpture in America, and it is believed the present exhibition in size and character is fully up to if not in advance of former ones. Probably no place better suited to the best presentation of works of sculpture could be selected than the Fifth Regiment Armory in Baltimore, where the exhibition is now held.



GENERAL VIEW OF NATIONAL SCULPTURE SOCIETY'S EXHIBITION, FIFTH REGIMENT ARMORY, BALTIMORE, MD.

of the most important public buildings, National, State, and Municipal, erected during recent years. Among the most representative are the Congressional Library at Washington—the sculptured detail of this monumental building was entirely under the direction of the Society—the Appellate Court, New York City, whose sculptured figures were executed by sculptors selected by a committee of this society. The Customs House, New York City, shows upon its façade and throughout the building the work of members of this society. And from this influence, this practical exposition of the value of sculpture in the embellishment of public structures, there has resulted an awakening of an appreciation of plastic art, and a general recognition all over this country, in every place where dignified architecture receives consideration.

As outlined in its constitution, the object of this society is to spread throughout the country the knowledge of

It was organized, arranged and managed by the joint efforts of the National Sculpture Society, the Municipal Art Society of Baltimore, and the Architectural Club of Baltimore, and the armory was placed at the disposal of these organizations by the officers of the Fifth Regiment, Maryland National Guard. The floral decorations were furnished or arranged by the Park Board, the Gardeners' Club, and certain public-spirited citizens.

While inspecting this most beautiful exhibition, one is impressed with the fact that a single century has accomplished it all. A hundred years ago there was not a single trained sculptor in America. And to-day it takes one of the largest buildings in the country to properly show even an indication of the sculptor's achievement. Surely this is something for the carping ones to ponder over who say we have no art in America.

From the day of Horatio Greenough, who died in 1852, to St. Gaudens, whose death but a few weeks ago has

aroused the country to a realization of his great genius, more has been accomplished than in any branch of the fine arts. And all this has been attained without the patronage of the government, as in other countries, and solely by the artistic force of the sculptor, an inertia that nothing can check, not even the lukewarm approval of our civic, state, and national legislative bodies.

To review this exhibition in detail would demand more space than is possible in an article of this nature. And not to review it in detail must not be construed as ignoring the merit of many men whose work is known wherever the sculptor's art is in evidence.

The visitor can spend many enjoyable afternoons at this armory if equipped with a little technical knowledge which will enable him to

appreciate the excellence of the work. But, unfortunately, this knowledge is possessed by but few, just in the same way that so few people outside the various professions can appreciate at their full value the good pictures, or the well-designed work of architecture. It

is through no sentiment of conceit that the artist sculptor, the artist painter, or the artist architect shows his work in public, but rather with the purpose of educating the public along lines of best and truest criticism, and thus create for the general good an appreciation that

marks the cultured mind and proves the right of these creative geniuses to a place not only in the mind of the rich, but in that of every man, as worthy of respect and encouragement for the good they are doing, and the uplifting influence of their work.

Architects have done much to bring about this recognition of the sculptor's and painter's art. Fully realizing the great value of the work of the sculptor and mural painter in the embellishment of their structures, they have given every encouragement to these sister



THE BLIND.

Lorado Taft, Sculptor.

arts, and in most large cities in this country the combination of architecture, sculpture, and painting has produced edifices that are the delight of the present generation and will stand as examples of the best for generations to come.

Fire Proof Buildings

By ERNEST FLAGG

THE difference between the cost of fireproof and non-fireproof constructions has a constant tendency to decrease. On the one hand the cost of wood is increasing with its growing scarcity, and on the other hand new and cheaper methods of fireproofing and new substitutes for wood are being put upon the market. While it must be confessed that these new methods and substances leave much to be desired, yet there is no doubt that progress is being made. I know from experience that it is quite practicable now to build entirely without the use of wood, and I have very little respect for the fireproof qualities of any building where wood is used. I have recently completed an office building and a large warehouse which were built almost without wood; what little was used was covered with metal so that it cannot burn, and it might just as well have been left out altogether.

There are a number of firms now making metal doors, windows and trim, and as the demand for fireproof features of this kind increases, as it will, invention will

be stimulated, new and more perfect methods will be discovered, and cheaper substances found to take the place of wood, so it seems only a question of time when fireproof buildings will be what the name implies.

There is no question in my mind that the time has already come when all buildings too high to be within easy and convenient reach of the Fire Department should be built entirely without the use of wood.

Most of our so-called fireproof buildings should be classed as semi-fireproof, if indeed the word "fireproof" belongs to them at all. In many of our large buildings of this sort there is an appalling quantity of wood. The buildings are like huge stoves filled with tinder ready for the match.

Here in New York these buildings contain all the way from fifty thousand to five hundred thousand square feet of floor space. They have double wooden floors laid on wooden sleepers, to say nothing of the doors, door bucks, window sash and frames, trim, office partitions, etc. I estimate that for each square foot of floor area there

are five square feet board measure of wood. In a building with 50,000 feet of floor area there would be 250,000 feet of timber, and in one of 500,000 feet of floor area there would be 2,500,000 feet of timber. Cubed, these quantities are 20,000 cubic feet and 200,000 cubic feet respectively. No wonder that such buildings were



NATIONAL SCULPTURE SOCIETY'S EXHIBITION.

SHINGEBIS WRESTLING WITH THE NORTH WIND.
J. Scott Hartley, Sculptor.

"Forth went Shingebis the Diver,
Wrestled all night with the North Wind
Wrestled naked on the Moorlands,
With the fierce Kabibonokka."

—Longfellow's "Hiawatha."

gutted at the San Francisco and Baltimore fires, and no wonder the Parker Building burned even without the aid of a general conflagration. I have heard all sorts of reasons but what I think was the true one advanced to

account for the latter fire. The true reason was that there was in this, as in most other so-called fireproof buildings, too much wood used.

We tear down what we call non-fireproof buildings, and build what we call fireproof buildings in their place, and we use in the "fireproof" buildings one hundred times as much inflammable material as was used in the old non-fireproof buildings. Moreover, we place a great part of that inflammable material out of reach of the Fire Department and where, when it once catches fire, as it is sure to do in a general conflagration, it will scatter firebrands far and near. For in a general fire these tall structures cause terrific draughts, and the fire sweeping through the upper stories carries destruction for blocks around. I was told that in the Baltimore fire the air currents were so fierce that whole pieces of blazing furniture were seen to fly out of the upper windows of some of these buildings and sail off to spread the flames in other quarters.

More than half of the wood which goes into such buildings is contained in the floors. This can all be eliminated without any hardship whatever, and it ought to be done immediately. There is certainly no excuse for wooden floors in buildings which are styled "fireproof." Cement floors cost considerably less than the double wooden floors, and the sleepers to which they are nailed. These floors though not as pleasant to walk on as wood can be covered with linoleum, carpet, or other material, or they can be constructed of oxy-chloride of magnesium, as is being done in the Singer Building, and require no covering, being both good looking and pleasant to walk on.

With wooden floors abolished, the other chief items of wood are the doors and trim of the rooms. It is becoming quite common now to use metal window frames and sash. The wood doors and trim could also be abolished, but not without a considerable increase in cost. Keene cement mouldings can be made to take the place of trim, and a great deal of the trim can and doubtless will be omitted altogether. The doors, trim and office partitions used in the Scribner Press and in the Singer Building were made by the Dahlstrom Metallic Door Co. of Jamestown, N. Y. They are well made and handsome; and while the cost is not excessive, considering the material and workmanship, it is still considerably in excess of wood. But as I have said, I think, as the demand increases, ways will be found to reduce the cost of this kind of work and also that fireproof doors of other material than iron and steel will be put on the market. I have had a door made of a substance called alignum in use in my house for several years; the only fault I have to find with it is that it is too heavy.

Until the cost of these things is further reduced it will be hard to banish wood altogether. We can, however, and should immediately abolish wood floors; with them will go, as I have said, more than half the wood, and three quarters of the danger, for what wood is left would be scattered, and though it would doubtless burn in a general conflagration, it would be hard to make much of a fire of it in any other contingency.

So long as there is any wood there will be danger, and we must consider the best way to overcome it. Fire doors, bulkheads and wire glass are all good in their way, but they are makeshifts, not the genuine article. There is only one sure way to prevent fire, and that is to use materials that won't burn.

Undoubtedly one great peril under present conditions is the multiplication of these "fireproof" buildings of great height and in close proximity to one another. Fire



NATIONAL SCULPTURE SOCIETY'S EXHIBITION.

EGYPT REAWAKENING.
Charles Keck, Sculptor.

in the upper part of one can spread to others and rage unchecked entirely out of reach of the Fire Department. In a crowded district like the lower part of this city each new building adds to the danger, but the danger is little now compared to what it soon will be if the present foolish methods of building are not stopped. Now, only about 15 per cent. of the land below Chambers street is covered with buildings of ten stories or more in height; imagine the conditions when 50 or 75 per cent. is covered by high buildings.

Clearly we are running into an impossible situation, and something must be done to correct it sooner or later. Danger from fire is not the only danger with which we are confronted by our reckless building. Light and sun are being shut out both from street and buildings. Builders take their light from adjoining land with absolute disregard as to what will happen when their neighbors build. Many of them trade on the fact that if their windows are shut by adjoining buildings, the builders will have no light for themselves. From any viewpoint the whole system is as unwise as it is unjust.

Passenger Elevators*

BY REGINALD PELHAM BOLTON

TO say that the number of elevators installed in most buildings has been arrived at by guesswork, is to make no reflection upon the designers of the building or

*The general considerations indicated in this article with much contributory information, facts, and figures, are presented in the book, "Elevator Service," just published by Mr. Bolton.

of the appliances, who in the absence of any definition of the work, or of the traffic provided by an elevator, have had no other means to guide them than a more or less confusing comparison with the plants provided in other buildings.

Passenger travel in elevators is governed by clearly defined limitations, and there is an ascertainable amount of traffic resulting from any elevator or combination of elevators.

In regular or schedule operation, this amount will be found to be a result of the number of floors which the elevator serves, and the average number of persons requiring the use of the elevator per trip.

If this combination be so proportioned, that too large an average number has to be carried on each trip, the distance between stops becomes so shortened that the speed of the elevator cannot be developed, and the time of the trip becomes unduly extended.

A point is, therefore, indicated at which best results in traffic and in time can be attained, and a rating or basis of carrying power per hour can be established so that the work of one elevator can be compared with others.

This is the first step necessary to an understanding of the service to be provided by any elevator plant, and such a basis goes further than establishing a definition of work, for it affords the means of comparing the work of machines of different speeds with others, and it also clears the way for proportioning the car to the traffic, a matter on which no information has hitherto been obtain-



NATIONAL SCULPTURE SOCIETY'S EXHIBITION.

SORROW.
Ephraim Kalser, Sculptor.

able. Yet it is clear that if it be ascertained that with a given number of passengers per trip, the maximum result in traffic is attained, then the size of the car should be pro-

portioned to that number and any greater or less size will affect, and probably will detract from the work accomplished.

By predetermining the size of the car for a given number of floors, without knowledge of the traffic conditions, many an architect has unknowingly predefined the limits of the work of the combined appliance, and at the same time, has brought about a combination of load and speed which does not fit the actual circumstances of traffic, and so the apparatus becomes ill-proportioned and uneconomical.

Of great importance, therefore, are those features which the designer of a building may lay down for the elevator, by a decision as to car size and number of floors, together with the weights which may be imposed upon the appliance, by the design of the car, and especially



NATIONAL SCULPTURE SOCIETY'S EXHIBITION.

NATURE'S SUN DIAL.

J. Scott Hartley, Sculptor.

from the decision to employ in a building of a certain character, a certain number of these appliances.

It is a rather common error to assume that the visitors to a building constitute the heaviest class of traffic in elevators. It will, on the contrary, be found that the tenants and their employees are the most difficult to handle with celerity and convenience. But as both must be handled with equal satisfaction, the defined duty of an elevator must cover the two forms of traffic, one consisting of passengers going all in one direction, and the other both ways, up and down, at the same period; and this the elevator can and will do, provided it be allotted that share of the traffic which does not exceed its maximum capacity.

If it has too large a traffic assigned to it, then the same results are brought about as in the subway, where the delay of one car by overcrowding brings about delay in others, lengthening the time of travel and actually carrying less persons per hour, than would be the case were a rapid schedule maintained.

The architects' problem of providing a sufficiency of these conveniences will be greatly simplified with a defined average passenger travel for an elevator (at any given number of floors) ready to his hand, with which he has only to decide upon the extent of the tenancy of the building, on which subject he is, of all persons, in the best position to pass.

Consciously or unconsciously, he is designing his building for a certain number of occupants, somewhere between entire emptiness and an overcrowding that would result in asphyxiation.

As a matter of fact, inquiry will establish very well-defined rates of occupancy of the tenanted or rentable area, which follow naturally the position of business buildings, and the nature of the business of the tenants, and reach a most natural limitation at the minimum cubical space which, without special ventilation, will afford reasonably hygienic conditions. With these facts laid down, and the best traffic from each elevator defined, the number of elevators which will cover every contingency is ascertainable.

The definition of duty, carrying with it the establishment of the best running time and speeds, goes further, for it enables the architect to decide unhesitatingly what is the proper division to make between local and express services.

It should evidently be such as to afford the upper or express section, just as good a service, in time and in the number of cars, as the lower part. It is stated by some persons who have had to do with buildings that are so divided as to afford the upper part an inferior service, that the inadequacy does not prevent their obtaining high rentals, on account of the superior light and view of upper floors. But for how long will such advantages last? And in case of fire, what would compensate for the detriment to such a building in case of inability to remove the helpless tenants of the upper section.

Many instances could be cited where the tenants of an upper section could not be removed by the elevators in less than an hour, if the stairs were cut off.

As an illustration, assume a building of twenty-three stories, having five local and five express elevators. These are divided at the eleventh floor, with the result that the lower part has a schedule service of 200 trips per hour, and the upper section, a service of only 120 trips per hour. There is no difference between the average tenancy of any of the floors, but a tenant of the upper part has only about half the convenience in number of cars passing his floor, and occupies nearly double the average time to reach his destination, and yet is more dependent upon the service than the tenant of a lower floor.

These and other considerations go to show how desirable it is that we should all understand what an elevator stands for in the movement of passengers, and should also realize that the features which result in the work it will accomplish, are in part contributed by the architect or designer, in part by the passengers and operators, and in part, only, by the designer of the machinery.

Illustrations

COTTAGE FOR MRS. ETHEL R. GRAEME, ENGLEWOOD, N. J.
AYMAR EMBURY II, ARCHITECT.

Gable ends built of local brown sandstone, the front and rear walls gray buff stucco, blinds and roof green, and wood trim white. First floor trim in cyprus stained dark brown, walls covered with yellow grass cloth. All trim of second floor painted white.

House is intended to reproduce as nearly as possible the Dutch farm house type in northern New Jersey, except that it is a story higher than most of the farm houses.

HOUSE OF HENRY HOWARD, ESQ., BROOKLINE, MASS.
CHARLES A. PLATT, ARCHITECT.

In the construction of this house the outside boarding has been omitted, and the metal lathing is put directly on the studs. Over this a coat of cement one inch thick was applied. On the inside between the studs another coat of cement is applied, making a two-inch reinforced wall. The outside wall has a white finish coat.

The rear, opening out on a flower garden, is the most important of the two elevations. It is in the rear that the principal living rooms are located.

The simple treatment characterizing the exterior is maintained throughout the interior. The hall is paneled from floor to ceiling and painted white.

The dining room is paneled in same manner, but is in dark wood. The library walls are lined with book-cases, and the mantel end of this room is finished entirely in wood.

In the basement is the kitchen. Here also is a garage which has fireproof walls and ceiling. The entrance to this garage is by way of an inclined plane, and through the wide gates at the left, as shown in the illustration of the street front. The service yard on the right is

sunken to the level of the kitchen and is screened by a lattice.

HOUSE OF MR. EUGENE CUENDET, HORTENSE PLACE,
ST. LOUIS, MO.

MESSRS. BARNETT, HAYNES & BARNETT, ARCHITECTS.

This house, located in the best residence section of St. Louis, was designed to follow the modern French school. It is constructed of red brick with Bedford stone trimmings. The plan, as will be seen, is a simple treatment of a double house plan, with living rooms opening off from main corridor. The dining room is wainscoted in oak from floor to ceiling, with doric pilasters. This room leads through artistic iron grilled doors into the conservatory. The library is finished in mahogany. The style is Italian Renaissance. The parlor is designed in the Adams period.

All bed chambers on second floor are so planned as to afford a similar exposure.

The billiard room is located in the basement and the main stairway is continued down to this room.

PLAINFIELD SAVINGS BANK, PLAINFIELD, N. J.
MARSH & GETTE, ARCHITECTS.

The building originally was a three-story brick store building, but was altered to suit the present conditions—the second story being taken out, making a high ceiling to the banking room.

The exterior of the building is of buff Indiana limestone, with base courses of granite. The roof is of copper. In the interior the vestibule is wainscoted with marble, and has a vaulted plaster ceiling. The floor of the vestibule and of the public space with the base is of gray marbleitic. The woodwork of the banking room is of gray stained oak with inlay panels, all the metal work and fixtures being of old brass. The room is in addition lighted by a large ceiling light.

Recent Court Decisions

WHEN IS A BUILDING COMPLETED?

LICHTY v. HOUSTON LUMBER CO., COLORADO SUPREME COURT.
88 *Pacific Reporter*, 846.

The defendant contracted for the construction of two houses, the contractor to furnish the material, which he purchased of the plaintiff lumber company. Failing payment therefor, the company sued to enforce its mechanics' lien, and from a judgment enforcing the lien the owner appealed. Under the Colorado statute the lien claimant has two months after the completion of the building in which to file his lien. At the time the owner accepted the building from the principal contractor as complete a mantel and grates remained to be put in, certain screens and a cellar door had still to be hung, some picture mouldings to be put in place and a window to be fitted. The house was rented and occupied before these things were done. The mantel and grates were not put in by the principal contractor, but under a separate contract. The court held that the acceptance of the building by the owner from the principal contractor did not constitute its completion so as to set the statute of limitations running against the material man. Completion meant the actual completion of the building—the time when the last work on it was one. The lien was accordingly enforced.

PROOF OF EMPLOYMENT BY A DECEASED TO PREPARE PLANS.
LITTLE & JOHNSON, SUPREME COURT, APPELLATE DIVISION.

102 *New York Supplement*, 754.

This was an action by architects upon a *quantum meruit* for services alleged to have been rendered to the defendant's testator in preparing preliminary studies for a city house. At the trial term the court gave judgment for the plaintiffs. The Appellate Division, considering that the deceased had no property in the city and seemed only to have contemplated the possibility of acquiring city property and building a house, thought it possible that the plaintiffs' purpose in preparing the sketches was to induce the deceased to carry his contemplated purchase into execution, and that there would not have been sufficient evidence of employment to justify submitting the case to the jury if one of the plaintiff firm had not been allowed to testify as a witness on his own behalf as to a number of consultations and interviews with deceased, a large part of the services for which compensation was sought consisting of these very consultations and interviews. The court held the admission of this evidence to be erroneous, under the law forbidding direct or indirect testimony by a survivor that a personal transaction did or did not take place, and what did or did not occur between the parties, reversed the judgment and granted a new trial.

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Kenilworth, Ill.—The Plainfield Savings Bank, Plain-
field, N. J. (3 plates)—Student Work, Society of
Beaux-Arts Architects (5 pages).

THAT the exhibition of the National Sculptors' Society, now being held in the Fifth Regiment Armory in Baltimore, would attract a large and representative number of architects, painters, sculptors and those interested in the allied arts, was to be expected, but the attendance of the laity in such numbers as are daily visiting the exhibition was as unlooked for as it is gratifying. The great value of art as an agent for the advancement of civilization is becoming more generally recognized in this country, and the benefits accruing from such a largely attended exhibition of the best examples of our American sculptors' work will be incalculable. Speaking the language of all nations, understood alike by the people of every land and every age, the elevating and ennobling influence of great works of art have doubtless inspired many a noble deed or act of heroism. Who has not stood before a masterpiece, and, catching some hint of the inspiration that directed the genius of its author, felt the thrill of lofty purpose? While the power and influence of good literature in the interest of art and the advancement and upbuilding of our civilization are great and widespread, exhibitions of the best examples of sculpture and painting are as eloquent and as inspiring as anything that has ever been written by pen.

TO those who give attention to the preservation of the rapidly disappearing artistic memorials of former times, whether located in this or other countries, the discussion and correspondence recently published in the architectural press of Great Britain relative to the restoration or preservation of Holyrood Chapel, near Edinburgh, will be of much interest. Although the late Lord

Melville devised a large sum of money to be expended at the discretion of an architect selected by him in a complete restoration of this exceptionally interesting example of mediæval work, no sooner did the fact become known and receive serious consideration than vehement objection and protest was offered by a considerable number of prominent architects, who claimed that a restoration in this case would simply mean vandalism, or a practical rebuilding of the greater part of the chapel.

WHILE we are inclined to believe that in many instances the ancient monument has perhaps a historic or sentimental rather than an artistic interest, the traditions concerning which can as well be preserved and perpetuated in a new or altered structure as in the old, Holyrood Chapel would not seem to rightly belong to that class. This structure stands to-day, notwithstanding the roof and a large part of one arcade have disappeared, one of the most beautiful fragments of mediæval architecture, and if properly protected, not restored, will doubtless endure for ages to come and delight artists and architects alike, not alone with its beauties of form, proportion, and detail, but also with its marvelously perfect workmanship, qualities all of them which probably can never be duplicated. To attempt anything like a true and complete restoration under such circumstances would be sheer folly, and the result must inevitably be a distinct and lamentable loss to architecture.

THE recent fire at Drury Lane Theatre, probably the most famous playhouse in the world, while of a serious and alarming nature was confined entirely to the stage and adjacent workrooms, thus apparently justifying the dependence that has been placed in the asbestos fire curtain and the general precautionary measures adopted for the safety of theatre audiences. While the fire actually occurred about four o'clock in the morning, thus leaving entirely to conjecture the possible fate of an audience which might have become panic-stricken and behaved badly had the fire broken out during a performance, the fact that the auditorium was perfectly protected from fire and heat and not even uncomfortably filled with smoke should have an altogether reassuring effect upon the theatre-going public. The absence of smoke and heat in the theatre proper was due to the perfect action of the skylights over the stage in breaking early in the course of the fire, thus providing vents for the escape of smoke and gases to the open air.

THIS fire, without doubt the most notable of its kind that has occurred in London in recent years, while costing the owners of the building some thousands of dollars, would in a sense seem to be almost a fortunate affair, for it furnishes, without sacrifice of human life, actual and incontrovertible proof of the wisdom of the laws governing the construction and equipment of theatres. Hereafter we may expect to hear less about the hardship to owners in being required to expend large sums in equipping theatres with doubtful safety appliances. A careful comparison of the results of the Drury Lane Theatre fire with those of the Iroquois fire, for example, and making proper allowance for the absence of an audience in one instance, should be sufficient to justify the requirement without protest of all the precautionary measures now generally adopted in our urban playhouses, in even the smallest village "opera house" where movable scenery is used.

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WINCHESTER CATHEDRAL—SOUTHEAST VIEW.

Foundations: The Use of Divers and the Grouting Machine

By FRANCIS FOX, M.Inst.C.E. (Alyn Bank, Wimbledon).

Read before the Royal Institute of British Architects, Monday, 17th February, 1908, and reprinted by permission of the author.

THE British Islands are so rich in cathedrals, abbeys, churches, castles, and other buildings dating, in many cases, from a remote past, and so many of these are suffering from the ravages of time, that my apology, if apology be needed, in thus occupying your time and attention, is the desire in the minds of all, that as these structures have been handed down to us by our ancestors, we should endeavor to preserve them for the use and delight of many generations to come.

When we look at these noble buildings, and consider the enormous expenditure of money and of thought, of skill and of taste, bestowed upon them, and remember that they are heirlooms, forming priceless history of art and architecture, the capital cost of which we have not to pay, the least we can do is to keep them in repair. In effecting this, we should aim at adopting some system that will not attract attention. The characteristics and features, the old stones with their cracks and deformations, with their weather-worn arrises and surfaces, with the very moss, should, if possible, be preserved. In those cases in which the actual stone has perished, it must, of course, be replaced by new; but walls that are simply cracked, or are within certain limits out of upright, should be secured without the constituent parts being removed or renovated.

I have in many cases pleaded for our ivy-covered buildings, that this lovely ornamentation of foliage should not be removed, but I have very reluctantly been driven to the conclusion that ivy is an enemy, and that it is guilty of having injured most seriously many buildings on which it has been allowed to grow.

My object is to call attention to a method of repairing old walls, at a minimum of cost, and with a maximum of strength; although many engineers are familiar with the process it has very seldom been applied, and is not known to circles outside their profession. When a wall cracks the ordinary remedy is to send for a builder or a mason and employ him to point up the injury, which he does with mortar and trowel, and he succeeds in producing a result satisfactory to his own pocket and, for a time, pleasing to his employer's eye. But it should be borne in mind that this pointing goes in for only an inch in depth, and that the injury to the wall is in no degree remedied: the crack remains a crack, and its tendency to widen is by no means lessened.

I do not at present desire to deal with the question of faulty foundations, although these are responsible for many failures. In all cases these should be examined, but, in many instances, the upper portions of the work are so weakened and disintegrated that to attempt at the

outset to rectify the defects below, would bring the whole structure into ruin. To underpin a badly cracked cathedral or church, before securing the fabric itself, is often to court disaster. The Romans were probably aware of the value of "grouting up" their work, but they had not the necessary appliance for doing it



FIG. 1.—THE GROUTING MACHINE AT WORK.

effectually; nor had we until within the last twenty years, when the late Mr. James Greathead invented the grouting machine for use in the construction of deep tunnels or electric tube railways of London. And here it will be desirable to explain what is meant by the term. If a mixture of cement, sand, and water be made in proper proportion, it is called "grout," and when this is poured like cream into the cavities of a wall, the wall is "grouted up." This is apparently a very simple process, but it is nevertheless one which requires judgment and care.

Some forty years ago a large railway bridge over the London and South Western Railway had a pier cracked from top to bottom, not in consequence of bad foundations, but due to carelessness on the part of the masons fixing the bed stones for the column. This was so badly injured that it had to be rebuilt, and fear was entertained that all the other piers might prove to be suffering from the same defect. To avoid having to reconstruct the entire number, "grouting" was adopted, and, by applying a funnel and pipe of considerable height, cement grout was forced by the hydrostatic pressure into any cavities which existed. Thus an accident was averted at a cost of £5 or £10, and a probable expense of several hundreds was avoided.

Another instance was that of an ordinary arched bridge to carry an express line of railway over a roadway which was under construction. The centering was, in error, taken down too soon, with the result that the abutments were pushed right and left on the masonry joints, making an unintentional plinth on both sides, and cracking the arch in several places through its entire width. The grouting system was applied as an experiment to avoid an expense of £500, which would have been necessitated by the reconstruction of the bridge. After an outlay in labor and cement of £27, the structure was completely repaired (except that these unequal plinths remain), and it has for twenty-five years carried some

of the heaviest express locomotives travelling at high speeds. But it will be observed that, unless height can be obtained for funnel and pipe, this system cannot be applied, and thus in cellar and tunnel work it could not be used. Hence it was that Mr. Greathead proposed to abolish the funnel and vertical pipe, and in its place to apply compressed air.

The grouting machine (fig. 1) consists of an iron receiver or reservoir into which, by means of pumps, air can be forced under any pressure up to 100 lbs. to the inch. This receiver is connected by a flexible tube to another portion of the apparatus called the "grouting pan," which is in fact a churn furnished with a handle and spindle to which are attached arms or beaters. The proper proportions of cement and water, and in certain cases sand, are then placed inside, the lid screwed down, and the contents churned up into the consistency of cream. This is now ready to be blown into the crack, the mouth of which on either side of the wall has meanwhile been clayed up to prevent the grout from escaping. The compressed air is then admitted to the grouting pan, and so soon as the necessary valve is opened the contents are discharged into the wall.

Having thus at our command an apparatus by which cement can be blown right into the heart of any structure, whereby all the loose particles of stone and the opposite sides of the crack can be agglutinated or, more properly, cemented together, we have the power of repairing injured buildings without being compelled to pull them down. The expense of grouting is very small, and does not generally amount to the one fifteenth or even one-twentieth part of the cost of pulling down and rebuilding.

One of the first applications of this system was carried out by the late Mr. Greathead in the case of some extensive wine cellars. In consequence of some adjacent excavations, these cellars had been cracked; and although the injury to the building was not important, still the expense which would have been incurred was very



FIG. 2.—WINCHESTER CATHEDRAL. OLD BEECH TREES UNDER WALLS OF PRESBYTERY.

great. These cellars contained costly wine, and it was estimated that the mere transference of it to other cellars would have depreciated its value to the extent of some £10,000. Hence it was essential that, if possible, this should be avoided, and the grouting machine was applied. So successful was the result that not even a

single bottle of wine had to be moved, and the entire cost of the work was only a few pounds.

Soon after this an alarming paragraph appeared in a certain London daily paper to the effect that, owing to



FIG. 3.—THE DIVER DESCENDING TO HIS WORK IN 14 FEET OF WATER.

tunnelling operations, the spire of Bow Church in Cheapside was *13 feet 6 inches* out of the upright! The Rector and his Wardens consequently were perturbed by this statement, and requested us to examine and report on the subject. In the course of our investigation several matters came to light which are of considerable interest and deserve to be placed on record. It was deemed advisable, pending the enquiry as to the cause and extent of the injury, to stop the pealing of the bells; and as, we are all aware, those children born within sound of Bow bells are known as "Cockneys," the curious result was that, for the fortnight during which the bells were silent, no "Cockneys" were born. It appears that the foundations of the tower and spire stand upon the Cheapside pavement of Roman time, which to-day is some 18 feet below the present level of the street. This continual raising of the level of London is doubtless due to the fact that the rubbish, resulting from the various fires from which the City has suffered in years gone by, and from the demolition of buildings, was not carted away, as is done to-day, but the surface was simply levelled down and the new buildings erected upon it. That there were cracks in the portion of the building connecting the church with the tower is undoubtedly true, but they were of ancient origin. Our task was to ascertain whether the tower and spire were out of perpendicular, and if so, to what extent. At first sight nothing was easier than to drop a plumb-bob and line from the top to the ground; but we soon found that

there was no access to the upper part of the steeple, and that if it had to be reached it would be necessary to erect a scaffolding—a matter of considerable expense. We therefore decided to take the necessary theodolite observations from both ends of Cheapside, but a fresh difficulty presented itself. It was then winter, and the mornings and evenings were so dark that the traffic had commenced and continued to run, before and after any such measurements could be taken. We therefore had to wait until the summer, when, in the early morning, we could have the free use of the street before carts had begun to pass. But it was then found that, although no traffic was moving, the vibration in the instrument was so great that no accurate result could at first be attained. The goods traffic on the London Chatham and Dover Railway at Ludgate Hill, the early trains on the District Railway, the trains on the Central London, all made themselves felt upon this delicate instrument, and we began to think we should fail to obtain any reliable result, and that London was never free from tremor. At last, however, it was found, on a bright summer's Sunday morning about four o'clock, that the throb and pulsation of London had ceased for a short time, and just at that moment we were able to obtain accurate measurements. Instead of 13 feet 6 inches (which, of course, had been misprinted instead of 13½ inches) we found that the total divergence from a vertical line was



FIG. 4.—WINCHESTER CATHEDRAL. WINDOW IN SOUTH TRANSEPT.

8 inches, which was exactly accounted for by the small cracks visible in the walls of the structure.

About a year later a summons from the Mayor of the

ancient city of Chester necessitated a visit to examine the towers and walls of those interesting remains, partly of Roman, partly of mediæval times. Evidently one of the towers was in jeopardy: it was cracked from top to bottom, and the various parts were moving in opposite directions. Whether the foundations were in fault, or the walls were weak, it was impossible to say; but the first thing to be done was to shore the tower with timber to prevent a collapse. The grouting machine was then applied, commencing at the base of the tower and gradually working upwards. By this means the cracks were filled with cement, and the walls were turned into monoliths; all the bulging portions, the old stones, and worn surfaces were left untouched, thus preserving the artistic and archæological interests. Then the founda-



FIG. 5.—WINCHESTER CATHEDRAL. DISINTEGRATED CONDITION OF VAULTING AT PRESBYTERY.

tions could be examined, strengthened, and underpinned, and everything put on a satisfactory basis. Although several years have elapsed since these repairs were effected, and the new lines of the London and North Western Railway have been in constant use, no further cracks nor movements have taken place.

One of the most interesting applications of the grouting machine is at Winchester. This splendid cathedral was—by the direction of Dr. Furneaux, the Dean—being repaired by Mr. T. G. Jackson, R.A., the diocesan architect, and the late Mr. J. B. Colson, the architect of the cathedral, whose recent death is deeply regretted by all. These gentlemen had found that very serious subsidence had taken place in various parts, that in the presbytery amounting to nearly 2 feet 6 inches.

The outer walls and buttresses had gone seriously out of the perpendicular, while the beautiful groined arches were distorted in form and disintegrated in character, and alarm had been caused by the fall of some stone from the roof. Mr. Jackson had sunk a trial pit some few yards distant, and had discovered a bed of peat 8 feet deep below the clay and resting upon a fine solid bed of flints and gravel, into which he had bored to some depth to prove its solidity. An excavation 5 feet in width was then made adjacent to the south wall, in which, at a depth of about 8 feet below the turf, the bottom of the masonry foundation was reached. It was discovered that the wall had been built on logs of beech wood, in fact whole trees placed side by side horizontally (fig. 2), and these again, in their turn, rested in some instances on a second layer of trees. These timbers were to some extent rotten, but in other cases the heart was sound and good as ever. The curious feature was, that even the rotten portion showed no signs of squeezing nor flattening under the weight of the wall. The level of the underside of these timbers coincided at that date with that of the water in the subsoil, although this level varied with dry and wet weather. This probably accounts for the timber decaying, as, in consequence of the draining of the city by the Corporation, the level has been permanently lowered, and the timber, which doubtless was just below water level, has of late years been alternately wet and dry, and has, consequently, to some extent, decayed. Beneath this timber a bed of chalky marl in places 6 feet in thickness, was found to exist; and as very little pumping was required to keep the excavation dry, and the water came away clear and pellucid without any sand or deposit, the work was able to be proceeded with by means of a hand pump. The bed of peat proved to be almost impervious to water; but when within about a foot of the bottom (the entire thickness proving to be from 5 feet to 8 feet 6 inches) the lowest layer was suddenly burst up by the influx of a great volume of water from the gravel bed below, under considerable head. This was due to the water in the adjacent river, and in the course of a minute the whole pit was filled with water up to the original level. Pumping was plainly inadmissible, the use of compressed air was inapplicable, screw piles and caissons were considered and rejected, a slab of concrete on which to float the cathedral was impossible, and finally it was decided to employ a diver, by which means the work could be done quietly and without vibration. A telegram to Messrs. Siebe & Gorman brought down two of their most experienced men, and by their aid (fig. 3) the excavation, in lengths of 5 feet, was finished, after which I descended in the dress to examine the bottom. This proved to be a hard flinty gravel, quite excellent, and, as this overlies the chalk, no better foundation could be either secured or desired.

Perhaps a few words may be of interest with reference to the diving. The boots weigh 20 lbs. apiece, each having a thick lead sole; the dress weighs 30 lbs.; the leads on chest and back are 40 lbs. each, and the helmet 20 lbs., making with the remainder of the equipment, a total load to be carried of nearly 200 lbs. But, notwithstanding all this, the flotation power of the water is so great that, in the case of a lightly built person going down the ladder, instead of treading on the rungs, it is necessary to place the feet beneath them, and pull oneself down step by step. The pits are absolutely dark

owing to the water being thick with peat, and no artificial light is possible; consequently the whole of the work is done, not by sight, but by feeling. So soon as the peat is excavated the bottom is covered over with bags filled with concrete, carefully and tightly trodden in all round; these are then slit open and another layer of bags placed on the top. These again are ripped up, and so on for four courses in all. The grouting machine can be used, the pipe being directed by the diver, but in this case all the chinks and crannies between the bags are filled by hand with cement concrete lowered down to him in buckets. Thus this mass becomes practically a solid rock and seals down the flood of water from the gravel, enabling the excavation to be pumped dry. Concreting is then continued, either in bulk or in block, until a considerable height is attained, and upon this blocks of concrete or brick in cement are carried up and tightly pinned to the underside of the old masonry, constituting the original foundations of the cathedral. When all these excavations or pits are completed, the walls of the presbytery will be practically standing on a bed of rock, instead of on compressible peat, and great credit is due to the diver for the excellent manner in which he has executed this most responsible work.

The sequence of operations is as follows:—

1. Shoring up outside and inside the walls and vaulting.

2. Grouting the walls, arching and buttresses.

3. The underpinning of the walls down to the gravel.

When the above is done, the cracks will be cut out and repaired, and steel tie-bars will be fixed in different parts of the fabric. Photographs illustrative of the cracks are given (figs. 4, 5 and 6).

An interesting fact in connection with this cathedral is given in the *Ecclesiastical Annals of Winchester*. It appears that in 1079 Bishop Walkelyn, a relative of William the Conqueror, laid the foundation of the Norman Church, but the Bishop, finding himself distressed for want of timber, applied to the King for permission to fell some of the trees. William consented, and gave the Bishop a grant to fell and bear away as much as he could in four days and nights. Walkelyn collected together all the woodmen of the country and cut down and carted away every tree in the forest in the prescribed time, save the large oak under which St. Augustine is said to have preached. The King, returning to Winchester a few days after, looked about for the wood, saying that his eyes were either fascinated or that he had lost his senses, as he could not discover the forest which had existed there a short time before. His attendants, however, explained the circumstances, which at first irritated William against the Bishop, the King remarking, "Most assuredly, Walkelyn, I was too liberal in my grant, you too exacting in the use of it." The timber then cut still forms portions of the nave roof. The building occupied fourteen years, and on 8th April, 1093, in the presence of nearly all the bishops and abbots of England, the monks of Winchester removed from the old minster to the new church with the "greatest exultation and glory."

It has now been ascertained that almost the entire cathedral stands on peat, which must be excavated. The south transept is over 4 feet out of the perpendicular, and cracks of the gravest character are found in all directions. The most serious fact is that the cathedral is sinking, due to the further compression of

the peat in those places whence it has not yet been removed. "Tell-tales" or fillets of cement are placed across the cracks to give warning of any movement taking place, and except in those parts which have already been underpinned, these cement fillets are broken through, in many cases within a month. In fact, the cathedral is doomed unless it is underpinned, and that without delay. Further extensive investigations will have to be made and repairs effected, both in the transept walls and main north and south aisles of this splendid cathedral, involving heavy expense. His Majesty the King has not only subscribed liberally to the fund for saving the edifice, but has commended this great work to his people; and surely they will not allow the Dean and Chapter to be hindered for the want of the necessary



FIG. 6.—WINCHESTER CATHEDRAL. CRACK IN WINDOW, MAIN CRYPT.

means to secure this building for the use of future generations. It is the burial place of several of our Saxon kings, and is bound up in the history of our country through the whole line of sovereigns to the present date.

The ancient church of Corhampton, near Bishop's Waltham, in Hampshire, repaired by Mr. Jackson, is another satisfactory instance of the application of the grouting machine. This Saxon church, 1,300 years old, was in a sadly dilapidated condition. In the west gable there were three large cracks, one from the ridge to the ground wide enough for a man's arm to enter; another, nearer the side wall, wide enough for the insertion of his head, whilst at the northwest angle the Saxon work threatened to fall bodily off. The mortar of the walls had perished through age, and the ivy had penetrated into the interior of the church in every direction. It

would have been unsafe to attempt any examination of the foundations for fear of bringing down the whole fabric; consequently the grouting machine was applied all over the building. The "grout" escaped at every point, and it occupied the attention of the masons both inside and outside, to stop it promptly by dabbing red clay onto the openings from which it was running. By the time the walls had taken all the grout that could be forced in, the church was practically a red building, both inside and outside, from the extensive use of this red clay. The cracks were in places so wide that they had to be specially treated before commencing to grout them, and the clay was so arranged as to extend into the crack about an inch on both faces. After the operation had been completed and the cement had set hard, the clay was removed and the interior was found to be filled with adamant; but as it did not come within an inch of the face of the wall, sufficient depth was left for fixing the flint work outside, and tiling inside. The result is that no trace of the crack is visible, and after this treatment of the walls they are stronger and better than they ever were. Subsequent steps were then taken to examine and, where necessary, to underpin the walls, and we have the satisfaction of knowing that these efforts have saved the church. The Vicar, the Rev. H. Churton, writing on the subject on 18th October, 1906, said: "The grouting was most effective, and I think the walls are now quite safe, and all without moving one of the Saxon 'long and short' stones."

Holy Trinity Church, Hull, of which the Rev. A. B. G. Lillingston is vicar, is the most recent instance of the application of this system; but the difficulties were as great or greater than any of those already described. This magnificent church, one of the three largest in England, was built soon after A. D. 1300, at which date the foundations of the tower were laid. The choir was completed in 1361, the nave in 1418, and the upper portion of the tower in 1520. The church consists of a fine nave of eight arches on each side with side aisles; the choir of five arches and also with side aisles; a transept with the handsome tower in the middle standing on four massive piers, each one cruciform on plan. The weight of the tower is 2,800 tons, equivalent to 700 tons on each pier. For some time past signs of serious settlements had shown themselves in the arches and piers surrounding the tower, and these had been under the observation of the architect of the church, Mr. F. S. Brodrick, York diocesan surveyor. These movements had caused considerable cracks, and portions of masonry had from time to time fallen, the most alarming of which was that of a large corbel carrying the ridge of the choir roof on the eastern face of the tower. The piers of the nave, which for their height are very slender, and are each carrying a load of 75 tons, exhibited serious deviation from the perpendicular, being from six to seven inches out of plumb, and the subsidence of the tower had caused the joints of the shafts to open on one side and to crush on the other. These movements were going on at a somewhat alarming rate when I was called into consultation. A tradition existed that, as the town of Hull stands on a bed of clay overlying a deep bed of silt, the tower was built on a raft of timber, but this required investigation. On making a careful survey of the building in conjunction with Mr. Brodrick, we came to the conclusion that, from some cause or other, the

tower was slowly sinking, and in so doing was pushing all the arches at the west end towards the west, and all the arches at the east towards the east. The first thing to be done was to strut and cross-brace the arches and columns to prevent the possibility of a collapse; next to examine the brickwork in the spandrels of the arches adjacent to the tower. These were covered with plaster, but, on this being removed, serious cracks were found, showing that the brick work was being dragged down by the pier. A hole was then made in the floor of the church, and, as expected, a timber raft of horizontal oak baulks crossing each other at right angles was discovered. The upper layer had been reduced—by rot—to a powder resembling "coffee-grounds," and innumerable worms known as "eel worms," from one eighth of an inch to a half inch in length, infested the material. The destruction of the upper layer was practically complete, and the lower layer of timber was decaying. The masonry overlying this timber was cracked and flaked in all directions and most seriously injured, and a very interesting and unexpected discovery was made. A stone seat, or bench table, was found surrounding the pier of the tower, and partly in consequence of the sinking of the tower, and partly as a result of the floor being raised at some period, this seat is now below the tiling, and completely out of sight, and all record of it had been lost. Stone seats of this character are said to have given rise to the expression "the weakest go to the wall." This is generally considered to imply that in the rush and race of life the strongest pass by the weakest, who are ground against the wall. However, it is said to mean that in mediæval times, when services were held in the body of the churches (as in the cathedrals and churches on the Continent of to-day), no sitting accommodation being provided, the strongest had to stand, but the weakest would find seats if they went to the wall. Certainly this is the more pleasing interpretation of the saying.

Pending the decision as to the very difficult problem involved in this parish church of Hull, for the removal of the decaying timber and crushed masonry, all of which had to be replaced, the grouting machine was freely used for pumping or forcing in cement into every cavity and crevice, and for filling up all the voids left by the decayed timber. Beneath the columns of the nave vertical piles, probably of larch, were found, but in some instances the timbers had gone into powder, leaving only the form of the timber impressed in the clay, so that where a pile formerly existed only a cylindrical hole similar to the moulded form for casting a pipe remained, and at the bottom of the holes was a mass of the before-mentioned "coffee-grounds." The contractors are Messrs. Thompson, of Peterborough, whose representative, Mr. Ball, has carried out the difficult and often dangerous operation with great skill. One pier of the tower was dealt with at a time, and the greatest care had to be exercised. An excavation 24 feet in length by 6 feet in width, and to the same depth as the old work, was made clear of the pier, and on both the east and west sides, and was filled with concrete in which were placed grillage beams in order to distribute the eventual weight over the whole area. A hole 2½ feet in depth and about 9 inches in width was then carefully cut or "jumped" through the masonry of the pier, and a steel girder, 24 inches by 7 inches, was threaded through the hole and rested on the grillage beams

in these concrete blocks. In order to prevent subsidence, due to the deflection of the girder when it received its load, steel wedges were driven in under the end of the steel beams, thus giving the initial deflection, and avoiding by this means all sinking of the pier. The girder was then built into position with blue brick in cement and was carefully grouted up. A second, third, and fourth steel beam were in due rotation placed in position, and in this manner the load was quietly and safely transferred from the decaying wood beams on to the steel girders. After this the old cracked masonry and rotting timbers (which were found to be snapped through) were removed, one-fourth part at a time, from beneath the pier, and their place filled up with concrete in cement, with the result that to-day each pier stands on about 560 square feet of solid concrete instead of on the old defective foundation. As soon as the four piers of the tower were secured the columns of the nave were taken down, one at a time, and rebuilt in vertical position with so much of the old masonry as was available; but in consequence of the transverse strains brought to bear upon them, we found about two blocks out of twelve fractured and useless.

A most satisfactory feature in connection with Hull Parish Church is the fact that when a town meeting was convened by the Mayor—a prominent Wesleyan Methodist—he called attention to the fact that the saving of this church was the duty of all classes and of all denominations. One of the local Members of Parliament, a Primitive Methodist, endorsed these remarks, and urgent appeals were then made by the Bishop of Ripon, the Bishop of Hull, and by the Vicar, the Rev. A. B. G. Lillingston. The meeting was attended by all classes and all denominations, and thus a great and united effort was made to raise the necessary funds to secure this fine church as the future cathedral of Hull.

I am desirous of saying a few words as to the risks of fire in these venerable and priceless buildings. We introduce all kinds of modern ideas in order to bring them in comfort up to date, such as furnaces, gas, electric light; but we often fail to introduce at the same time the necessary precautions. The plumber on the roof is a well-known cause of disaster, and to-day workmen carry into the most inflammable places, such as amongst timber roofs, flaring petroleum lamps and plumbers' blow-lamps. The most stringent rules are required if we desire to protect these buildings. If workmen have to visit such places in the dark, the use of oil should be absolutely prohibited, and wax candles inside lanterns only allowed. Even these should be numbered and returned when done with to an official entrusted with this duty.

Two objections have been urged against the use of the grouting machine. The first is that the cement blown into a wall may afterwards expand and again crack the building. The answer to this is that cement which does swell or expand should never be used, whether with or without the machine, and that it can easily be detected beforehand by efficient inspection and tests. The second objection is that if such a high compression of air be used, the walls may be blown to pieces; but this is impossible, for although it is necessary to obtain penetration into the heart of the work by velocity, yet the safeguard is the use of the rubber hose which would very soon burst. In addition to this the clay pointing of the cracks would not sustain any heavy pressure.

My opinion, after long experience, is that the grouting machine in the hands of a practical man who knows how to employ it, is of unmixed advantage, and that no valid objection exists against its wholesale adoption.

NOTE ON CEMENT.

In using the grouting machine it is all-important that only cement of excellent quality should be used. It should not be quick-setting, as this tends to clog the machine and piping, and would if allowed to do so ruin both; nor should it be a cement which will expand to an appreciable extent in the work. This points to the necessity for submitting it (not only that which is used in the machine, but equally so that used in ordinary building) to the tests provided for in the standard specification. All kinds of natural cement, especially Belgian, should be absolutely condemned; for the author has been called in to advise on several buildings in which it had been employed with most disastrous results.

As regards burying steel girders in cement concrete, the author is of opinion, after long experience and many tests, that, if properly treated, the metal is indestructible when fixed above water level. What the eventual result may be below water level remains to be proved, and its history still has to be written; therefore for cathedral and church work he would not care to recommend its adoption.

Chicago Architectural Club Exhibition

EACH succeeding architectural exhibition held this Spring emphasizes more than its predecessor the tendency of committees of selection to provide exhibits that will attract the laity. The day of the purely technical architectural exhibition seems to be passing rapidly. The exhibition of the Chicago Architectural Club, which has just closed, measured as to its value as an educational factor in the life of the general public was a most satisfactory and a successful one.

Few problems were presented that would invite discussion among the profession. The absence of material of this character would seem to be another indication of the growing tendency in exhibitions of this nature to educate the client, rather than to broaden and assisting the architect.

While much of the material exhibited has been seen in previous exhibitions this spring and during the winter, there is a large amount of work by local architects that materially adds to the high character of the exhibition.

Much interest is shown in the exhibit of successful drawings entered for the eighth annual travelling scholarship of the Chicago Architectural Club. The subject, a public gymnasium and bath, is shown in five sketches. The successful competitor was George Ausumb.

There is also a display by the Chicago School of Architecture which presents good examples of student work.

Mr. D. H. Perkins' exhibit of proposed new Chicago schoolhouses is most interesting.

Exhibits by Mr. George W. Maher, Messrs. Jenney, Mundie & Jensen, Messrs. Holabird & Roche, all show sanely designed types that are worthy of careful study. Other exhibits of much interest are noted, and the general impression received by the visitor is that this exhibition is on the whole a creditable one.

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THE unusual number of disastrous fires which have occurred in rapid succession since the beginning of the present year render of more than passing interest the fire tests of building materials that have been recently conducted. Among the most important of these may be mentioned those made by the United States Geological Survey in behalf of the Government, in cooperation with the National Board of Fire Underwriters and the National Fire Protection Association. Panels of various building materials, including brick, concrete blocks, sandstone, granite, limestone, glazed building and partition terra cotta blocks, concrete of gravel, cinders, limestone, and granite were tested. The conditions under which the tests were made were exceptionally severe, the specimens being quickly heated to a temperature of approximately 1700 degrees Fahr., and this temperature maintained for an hour and a half when water was turned on from a hose with a pressure of fifty pounds to the square inch.

WHILE the results obtained from these tests were not conclusive, they furnish a basis for comparison of the different materials, and also serve to attract attention to several important facts. As might have been expected, the natural building stones were almost entirely destroyed, while brick behaved rather better than any other material tested. Of these the

hydraulic pressed brick was the least affected, and recently manufactured common brick the most, while between the two extremes were the ordinary hard burned brick taken from a piece of work that had been standing for some years. Of the concretes tested it would be difficult to state positively which sustained the least damage, although the evidence seemed to point toward that in which granite was used as being perhaps in a slightly better condition after the test than the others. The damage, however, in no case extended very far into the concrete, probably not more than one and one-half inches. At this depth it would seem that the temperature was comparatively low, and moreover the evidence indicated a slow rate of travel for heat through concrete, two qualities which are essential in any material intended for fireproofing purposes.

ONE of the most important and useful lessons taught by these tests would seem to be the effect that the proportion of cement used and also the wetness of the concrete mixture bore to the fireproofing qualities of the concrete. The richer mixtures with the greatest percentage of water, while somewhat pitted and scarred, were in comparison with the leaner, dryer mixtures practically uninjured after the tests. With the increasing use of concrete as a building material the study of the mixtures best suited to meet the requirements not only of strength, but also of safety in the event of fire, becomes of timely interest, and various tests such as those noted above afford excellent opportunity for such study. If architects in general would give attention to, and be guided by, the results of comprehensive tests as supplementing the lessons taught by some of the great conflagrations of recent years, the time would not be far distant when really fireproof structures would become the rule rather than the exception, and a fire of large proportions an impossibility.

EVEN casual readers of the better class of current literature, those who read for pleasure rather than profit, and who do not perhaps appreciate the specific bearing of archæology on the elucidation of historical questions can scarcely have failed to note the unusual activity in this special field of investigation and research, as reflected in publications giving attention to such matters. In all sections of the old world, where ancient civilization reached its highest development, the spade of the excavator is busy, and the relics and fragments of art, architecture, and inscriptions being unearthed bear silent but none the less eloquent witness to the matchless achievements of many of the races of antiquity. Among the more important recent discoveries is a temple of Saturn unearthed at Dugga by the French archæologists, in which a number of columns and other architectural details are still in an excellent state of preservation. Also in the collection was found a colossal figure of Apollo carrying a richly ornamented lyre. In Greece, near Athens, excavations have yielded much of interest and importance, while discoveries of no less significance and value have rewarded the labors of those engaged in tracing the record of ancient Rome. A more fascinating work than that of the archæologist or one which does more to broaden and develop the understanding and add to a liberal education would be difficult to imagine.

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MAIN BUILDING FROM THE NORTH.

The College of the City of New York

A NOBLE building, like a powerful individual, wields a strong influence upon the community. This influence is subtle, and yet may be very profound and enduring. It is sure if the building is successfully designed. The measure of its success may be found in the extent to which it satisfies the judgment of the general community.

The difficulty of achieving artistic success in modern buildings may be apprehended when one realizes the complex problems involved. The monuments of old were designed when, to a large extent, art made her own conditions.

The architect of to-day must work under conditions growing out of the multitude of the practical needs of modern civilization, and he must be a master mind to solve the complex problems in an embodiment clothed in the simple, harmonious exterior and interior which art demands. A building may be beautiful and at the same time futile if it fails to fit its purposes. The really successful building demands that its designer shall have

been not only an artist, but a constructor of broad abilities, keen discernment, and masterful resource.

Perhaps there is no class of buildings which so appeals to men as that devoted to higher education. College architecture is more and more receiving its due recognition and the progress made in it during the past few years has been remarkable. One of the largest and most comprehensive schemes for a college in this country is that of the College of the City of New York, and the architect, Mr. George B. Post, may be said to have been successful.

If the buildings contain the proper mechanism for their purpose and are in every way representative of the best ideals of the work done by the institution.

If their architecture is capable of inspiration to the students and the community.

If they have that nobility of aspect which impresses all who see it, and hence is far-reaching in its influence, and if above all they have that indescribable something which means "home" to the best sentiments of

student days, they shall have been worthy of their conception. If they shall include all the above characteristics they shall properly serve their purpose in being the successful means of carrying out the important work of



BIRDSEYE VIEW OF SITE.

the strong and capable president of the college, Dr. John H. Finley, and his capable faculty, all for the most far-reaching good of the City of New York.

The idea of a free academy or college for the education of graduates of the public schools of New York City was first brought forward by Townsend Harris, President of the Board of Education of the City of New York from 1846 to 1847, and after bitter and persistent opposition such an institution was established. The building for the free academy was erected nearly sixty years ago on the corner of Twenty-third Street and Lexington Avenue, from plans by James Renwick, and stands on what was then a spacious lot. But the college greatly outgrew the confines of its walls some years ago, resulting in the proposal to build a new building. A competition of representative architects was held, resulting in the selection of Mr. George B. Post. This building was to be located on the large block surrounded by 138th Street, Convent Avenue and St. Nicholas Terrace. This latter street forms a large sweeping curve adjoining the terrace. After a delay of three or four years the greater part of two additional blocks included between 138th and 140th Streets, Convent and Amsterdam Avenues, was purchased. A group of buildings covering the greater part of four city blocks was designed in the same general character and style as the original competitive design.

It is not the purpose of this article to describe minutely the details of the problems presented to the architect for solution during the six years of active work and construction. It is sufficient to say that during this period the executive control of the institution and the heads of various departments were constantly changing. Nor is it a further purpose to present the multitude of perplexing problems of a technical nature, nor the difficulties of carrying out this vast problem within the confines of municipal construction which in complicated work becomes involved in difficulties of the most serious nature. It can truly be said, however, that throughout this long-drawn-out period, beset on every side by constantly changing and almost endless difficulties in the execution of this work, the architect, Mr. George B. Post, never hesitated to work for "improvement" and

for the "best," invariably at great personal loss. If the true story of this loss were known it would show a loyal tribute to the best ideals of the profession of architecture. But we are not to dwell upon these things, but rather to look at the results which have been obtained. There was one great satisfaction which is to the lasting credit of the municipality of New York. That is, the "Political side," which has so often left its murky trail in the construction of large public works. Throughout the years of planning and construction of the college, it can be honestly said that the conduct of the Board of Trustees of the college (men appointed by the city and serving without remuneration), has been of the highest and broadest character in the interests of the city, and that in this extended period neither politics nor political influence were directly or indirectly brought to bear by any one to influence the architect in the carrying out of his many and varied responsibilities involving the expenditure of nearly five millions of dollars of the city's money.

For the new buildings of the College of the City of New York was provided one of the most remarkable sites in a great city. The plot consists of a great plateau (a sort of Acropolis), located more than one hundred feet above the lower city. This plateau is retained by a great curved masonry wall constructed of native gneiss stone.

From the buildings placed upon this high elevation the view commands the city, its bays and rivers, Staten



MECHANICAL ARTS BUILDING, FROM CAMPUS.

Island, and the surrounding country from the Orange Mountains to Long Island. The Hudson, the Palisades, and the Sound are visible for miles to the north and east, while but a step away are Grant's Tomb, High

Bridge, and the domes of Columbia and New York Universities. Upon this site New York City has reared a monument for herself, and in it housed a free college to accommodate six thousand students.



DETAIL OF WING OF MAIN BUILDING, FACING CAMPUS.

Who is there who has been so fortunate as to visit Oxford and Cambridge who has not been thrilled and inspired by their architecture and its setting. It would be too much to hope that there could be set in the heart of New York City the same results as these, which have been centuries in obtaining their present beauty. But in the buildings for the College of the City of New York, and in their beautiful site, with its extensive panorama and noble setting, there is much to call forth our strongest admiration.

That this unusual opportunity has been taken advantage of is the enthusiastic comment of those who have lived with the buildings during the years in which they have grown out of the rocky ground whose boulders form the walls of the structures erected. To build buildings worthy of this site and setting was the task set before the architect, and if this appears as partially accomplished to-day, may we not look for the greater success of the future, when they, like the old world universities, have been mellowed by years of exposure to the elements and softened by nature, whose vines and trees and shrubbery and velvety lawns will each year give more and more harmony, until the time shall come when these buildings, too, may truly be said to have grown and mingled with nature and have formed a part of her. At this time, and not until then, have we a right to expect a key of complete harmony.

It must be admitted that the architect had courage, when, keenly aware of present-day criticism as is imperative with such a bold effort to gain a proper ultimate effect, he willed to use a combination of color and

materials, which were so essentially the proper ones, given the economical necessity of using the native gneiss stone taken out of the foundations. When this stone is used alone, unrelieved by the illuminating influence of another much brighter material, it is sombre and homely. Too many of our buildings are designed for to-day alone, and become lifeless in a few years.

A fair comparison in color contrasts is seen in recent work in Oxford and Cambridge, particularly the former, in the restorations being made with new stones set in the midst of the dark, rich, mellowed surfaces. This gives a contrast of color most startling, but realizing from past knowledge that in a very few years these will tone into the shade of the wall we are not bothered by the present unpleasant effect. That the sand-blasted surface of the terra cotta of the College of the City of New York will tone to the desired key there is no doubt, for a comparison to-day between the Amsterdam Avenue entrance to Townsend Harris Hall, erected about three or four years ago, with the recently constructed arched gateway at 139th Street and the avenue, shows a most gratifying and decisive change of color in the older construction—a change of several shades. Or, again, the amount of this weathering may be seen very clearly where broken pieces of terra cotta have been replaced by new ones in the end wing of the main building facing on Convent



ENTRANCE FROM CAMPUS, CHEMICAL BUILDING.

Avenue. Then, too, the gneiss of the walls proper has gradually lightened in color and become warmer in tone than when erected, and we know from experience it will lighten in tone still more in time.

At the time this ground was acquired it was covered with rocks cropping out of the surface and inhabited by squatters and goats. The problem presented unusual conditions. Over the entire grounds where the rock did



DETAIL, EXTERIOR OF GREAT HALL—MAIN BUILDING.

not project in great boulders it lay close beneath the surface. This involved a tremendous expense in blasting for excavating purposes, which brought forth the idea to utilize this gneiss or native stone for the walls of the buildings. In the construction of the walls great care was used (much to the disgust of the Italian masons on the work) to have as many as possible of the rusty and iron-touched stones show in the stonework. This selection of stones laid in the wall produces great varieties of color from various points of view and in varying lights. The general effect from a distance is a warm mouse gray, illumined by light ornamental parts. As seen nearby in a mellow sunlight the wall is rich in browns and reds, but viewed directly underneath in certain lights it is of a deep golden hue. In the late afternoon, when the sun is low, a brilliant orange tone may be occasionally seen covering an entire wall surface. This particular effect has been seen several times on the end wall of the gymnasium toward Townsend Harris Hall.

Let us look at the buildings from the standpoint of their architecture. Guided in their development by an architect who grasps the larger essentials of all his

problems, the college has been given a quality so common in the finer examples of Gothic architecture in the Old World, but so utterly lacking in almost all such works in this country—the quality of large scale and simple grandeur. No attempt was made to introduce charming and lacelike details to please and add pictorial effect to the design, but in every case richness where applied was concentrated where the design called for it, and where it would be essentially a part of the whole design as constructed from the requirements within. Rather was picturesqueness, in so far as it was obtained, gained by the massing of the various large parts of the buildings and their relation to each other and by their setting. By this means scale was not sacrificed, and by expressing the simplicity of their plans and the masses of the exteriors, these buildings have been given a dignity, a grandeur and a scale so seldom obtained in Gothic work in this country, but so well known to all who have been so fortunate as to pause under the spell of such a struc-



DETAIL OF ENTRANCE FROM CAMPUS—TOWNSEND HARRIS HALL.

ture as the Kings College Chapel at Cambridge—qualities so universally needed in any public building with the environments of the present and future New York.

Set boldly upon a high eminence, the great tower of

the main building, together with its abutting wings, all silhouetted against the western sky, makes a noble and impressive spectacle as seen by the thousands of passengers who daily view it from the distant railroad bridge. Toward evening, as the whole outlines of this tower melt into the golden sunset, it is an inspiring sight.

Standing in the avenue just below the curved terrace wall upon which the main building is set, and looking upward through the trees and with the foreground of boulders cropping out of the hillside, the huge main building seems to virtually grow out of its setting and form a part of it—and it is here, that, with the soft afternoon light behind and nature in front, that one can truly get a glimpse of the mellowed effect of the buildings as they will appear in the future.

Or yet if, perchance, on a sunny afternoon one is walking some blocks away on the wide avenues of the East Side of upper New York and unexpectedly looking up a cross street sees this noble building standing as the summit of the vista spreading its great arms of welcome to the city, he is thrilled by the grandeur of it all.

These several points of view are perhaps the best at the present time, because the buildings are seen with nature's setting in the foreground in the form of a park, which gives all the softening effects that trees and grass and shrubbery alone can give. The view from the other side of the group (that position from which the buildings are commonly seen), is devoid of any such setting, but will ultimately have it when the grounds are completed, and the landscape work in the adjoining parks is developed. Is there not reason to believe that in a very few years the effect of the group looking from Amsterdam Avenue from under the monumental archway at the 139th Street entrance across the quadrangle to the Great Hall at the end of the vista will make one of the most impressive views of any group of buildings in this country, and as time goes on compare favorably with the best in Europe?

It is true, as mentioned before, that from the college buildings can be seen much of the country surrounding New York on every side, and it is at the same time true that the view of the college buildings from some of these points is most impressive. Among these may be mentioned in particular the effect of the group from the Palisades and from High Bridge.

Within the quadrangle, shutting out as it does the busy city, one already feels as if he were far removed from restless New York. This is the common impression of those who have stepped aside and entered the portals of the college grounds. If the strong collegiate influence is so apparent now to those who go among the buildings, what will it be when nature has had her way and association endeared them?

But more than all this—what will these buildings mean to the students and faculty—to those who live within them? After all, this is the real test of the merit of their conception, and all else is comparatively valueless unless the spirit of the "student home" unobtrusively permeates every quarter of the group. What is this indescribable quality which means home to the student? What are the elements which tend to make toward that comfort and satisfaction to the student which he unconsciously recognizes and feels at every hand? Can we tell just what it is that goes to make up this characteristic? No man can describe it exactly, but every man recognizes the quality when he stands in its presence. Perhaps it is

obtained from harmony—harmony of color, harmony of scale, harmony in the relation of the different parts; perhaps better described by the word proportion—the sense of appropriateness of things. What elements go to make this home-like quality? The chairs the students use, the color of the woodwork, the proportion of the rooms and of the corridors, the light and cheerfulness and yet quality of all within and without, the comfort of things—the sense that comes from true Art—Art which is not pretending but everywhere apparent even in the smallest details. In other words, the result which can only be obtained by the honest, faithful and unrelenting study of each element which presents itself for solution, thought out and solved in the broadest sense, taking into consideration each detail practical or æsthetic which goes



STONE SEAT AND FLAGSTAFF ON CAMPUS.

to make up the many parts of the buildings into a great homogeneous whole. The illustrations cannot fully show whether the College of the City of New York contains this great characteristic. But every man who cares to visit these buildings and give himself up to them and who will look at them with a sympathetic eye to their future, will readily answer this question.

This element of comfort as opposed to the coldness of the purely monumental, while desirable in all buildings to a more or less degree, seems essential to the success of some, and none more so than to those buildings in which are formed our aspirations of the future, our most lasting friendships and ideals, and about which in later years cluster our retrospective thoughts and pleasantest ideals—the college, "our Alma Mater."

There are several means of approach into the group but that which is most commonly used is from One Hundred and Thirty-ninth Street and the Boulevard. As one walks from the subway at the foot of the hill and turns into One Hundred and Thirty-ninth Street he is charmed with a sight so unusual in New York. That is to see the end of the vista completed by a monumental feature, which in this case, is the picturesque outlines of the great tower of the college silhouetted against the sky. This, together with the entrance archway and abutting buildings, forms a picture which is most refreshing. As the hill is ascended, more and more of the tower can be seen and then the outlines of the cathedral-like Great Hall with its massive buttresses and tracery windows looms into view. In entering the grounds proper a pleasant surprise awaits the visitor, for here he is suddenly sensible of being in a sort of new world—a community in itself. For within this quadrangle the grounds and buildings have been treated as one great unit and are tied together by the treatment of the grounds into a harmonious whole.

These grounds have been given the same serious study and consideration as have the buildings proper, and are intended when completed to have the same unity and architectural interest and appropriateness for their purpose as the buildings. Within the enclosure, through which a street passes almost unseen as part of the general treatment, the sidewalks, lamp-posts, terraces, steps and all features contained therein, have been designed in the same style and character, and, where possible, of the same materials as the buildings.

An ornamental iron fence encloses the greater portion of these grounds. In addition to the arched gateway at 139th Street and Amsterdam Avenue, three archways span Convent Avenue and St. Nicholas Terrace, demarking the lines of the college property. In the quadrangle a large plaza unites the buildings. In this plaza there is located a lofty flagpole with an ornamental base and seat, and also several stone seats. All the walks, terraces and sidewalks are bordered with low walls of rubble stonework, capped with white granite to be in harmony with the buildings in materials and color. At night the outlines of these features will be indicated by numerous lamp-posts, which are placed in such locations as to indicate the principal axes and means of communication. To the south of the group of buildings there are four city blocks which are as yet undeveloped parks, and it is hoped that a portion at least of this tract may be used as recreation grounds for the college and the public. The development of these blocks means much to the effect of the buildings from the southern view of the group.

ARTHUR EBBS WILLAUER.

Note.—Mr. Willauer's article describing the exterior features of this group of buildings will be concluded in our next issue, when there will also be presented plans and working drawings of the various buildings.

It has been decided to defer the illustration and description of the interiors until a later issue.

The dedication services of the College occur to-morrow, May 14th.

Restoration of the Baptistery, Florence

THE following communication, originally printed in the *London Times*, is of interest:

SIR: Many of your readers will, I am sure, be pleased

or interested to learn that, after more than twenty years of restoration, the cupola of the famous Baptistery of Florence has at last been freed from its encumbering scaffolding, with the result that once more its component masses of mosaic have been made visible to the public. The roof of the Florentine Baptistery has been concealed for so long in the process of renovation that comparatively few persons have been privileged to enjoy the really magnificent spectacle of the great cupola, with its glittering mosaics in gold and colors illuminated by the noontide sunshine. These celebrated mosaics, which are the joint work of a Greek named Appollonios and of numerous Florentine artists of the fourteenth and fifteenth centuries, consist principally of small scenes representing the Rewards of the Just and the Punishment of the Unjust, among the latter being conspicuous the grotesque form of Dante's Lucifer chewing in his jaws the soul of the sinner "che ha maggior pena." Above the altar appears the colossal figure of Christ in glory, a singularly noble and majestic conception. With the exception of the arch of the tribune behind the altar, where the mosaics (of an earlier date than those in the cupola) are at present being carefully restored, the interior of this unique temple, once the cathedral church of Florence, has at last been cleared from the scaffolding and screens that have disfigured its ornaments and proportions for so many years, and the general effect of the Baptistery on a sunny morning is now beautiful in the extreme.—*British Architect*.

The Tomb of Mausolus

WITH further reference to Professor Lethaby's monograph on the Tomb, noted in a recent issue of *THE AMERICAN ARCHITECT*, the following description of the construction of this structure is of interest:

"The type of construction of which the mausoleum is an example is remarkable from the way in which the marble is handled. As usual in Greek works, it is put together without mortar, the joints being *polished* so as to sit very close. An abundance of bronze cramps was used to link stone to stone. In the columns were fine bronze dowels, some of which are preserved at the Museum. The steps of the pyramid have a raised fillet along the back and at the two ends. The latter, with those on the adjoining stones, make rolls which throw the water away from the actual joints. These fillets fit into cavities cut in the next course above. The scheme is derived from tiling, and I think it probable that the exposed joints were covered by a marble A piece. The entablature is, as we should think, carelessly constructed, being broken up into many pieces, and with fragile ornamental members inserted in rebates. These points, and the use of mitre joints for the lacunar margins and carved mouldings, make one think of a sort of 'marble joinery' rather than masonry. The workers must have been skilful in an extreme degree, and the whole outlook is very advanced and even doubtful. Adler suggests that the insertion of the delicately mouldings in rebated ledges was done with the object of hastening the works. The same custom is followed at Priene; and another reason, I think, is that these parts are wrought in a much finer quality of marble."

New York's New Assay Office Building

James Knox Taylor, the supervising architect of the Treasury Department, will receive bids on May 12 for the construction of the new Assay Office building in New York City. The building will cost about \$400,000, and will be one of the most remarkable structures in the lower part of the metropolis. It will be on the site of the old Assay Office, near the corner of Nassau and Wall streets, and will be constructed wholly of reinforced concrete.

The most striking feature of the structure will be its chimney, which is to overtop by many feet any building in the vicinity and any building yet completed in New York, except the Singer Building. From the sidewalk this giant stack will be 400 feet in height. It will be at the rear and in the center of the ten-story structure.

"The stack is to be built to such an enormous height in order to carry the poisonous fumes of the furnaces far above any offices in the neighborhood," said Mr. Taylor, to-day; "I think it will be the tallest smokestack on Manhattan Island."—*N. Y. Tribune*.

Recent Court Decisions

DEFECTIVE PLANS.

DUNNE v. ROBINSON, APPELLATE TERM. APRIL 20, 1907.
103 *New York Supplement*, 878.

An action for \$500, balance of fee for services as architect in preparing plans for a store and loft building; \$100 had been paid on account. The court held that there was ample evidence introduced upon the trial to warrant the justice in finding that the plans prepared and put in evidence by the plaintiff were defective and utterly unfit for use. No dimensions were noted on them, the figures and scales did not correspond, and they were full of omissions and inaccuracies. The plaintiff himself admitted that his plans were incomplete, and it appeared from the testimony of expert witnesses called by the defendant that the plans could not be used by a builder. The plaintiff admitted that this was his first large job; that he had previously drawn plans for alterations only, and had never drawn plans from which a building was constructed. It further appeared from the evidence that he was also engaged in the iron business; that he had lately been an inspector in the building department; that he was not a member of the Institute of Architects, and that he had but very slight experience in architectural work. As the defects and omissions made ran through the entire system of plans, the court held that they were so grossly defective that the plaintiff was not entitled even to a *pro rata* payment in the proportion that defective plans bear to perfect ones. The evidence showed that the payment on account had been made without knowledge of the defective character of the plans.

Section 15 of the Pennsylvania Act of 1901 (P. L. 438) in relation to mechanics' liens reads: "The right to file a claim may be waived by agreement between the claimant and the party with whom he contracts, or by any conduct which operates to equitably estop the claimant." The court held the claimant equitably estopped by his conduct and agreement from filing and attempting to enforce the collection of a lien.



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Jury's Criticism of Second Preliminary Competition for Paris Prize

THE second preliminary competition for the Paris Prize under the auspices of the Society of Beaux-Arts Architects was judged April 16, 1908.

The subject was "A Chateau" or fine country residence with accessories and pleasure grounds for the use of a rich family.

The program was written by M. L. Guadet, the distinguished French architect.

The conditions required that the sketches be made *en loge* in twenty-four consecutive hours.

The five men selected from twenty contestants were as stated below.

None of the sketches quite reached the standard expected by the jury. In several instances the service departments were entirely separated from the main building; in others the exterior resembled museums and monumental buildings rather than country houses. Many of the drawings were carelessly rendered, although the jury recognized that proper allowance should be made owing to the strenuous condition imposed of working all night. Due consideration was given by the jury to the proportions of rooms; the arrangements of the accessories in relation to the building and the general expression of plans and elevations.

Five Logists for Paris Prize.—Hopkins, J. Edwin, Atelier Jallade-Prevot; Ewald, Raymond, Atelier Barber; Van Alen, William, Atelier Barber; Rebori, Andrew, Atelier Massachusetts Institute of Technology; Adams, Carl C., Atelier Hornbostel.

Alternate—Speers, G. A., Atelier Jallade-Prevot; Lange, John A., Atelier Barber; Romer, Charles, Atelier Hornbostel.

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NOTICE OF REMOVAL

In order to secure adequate space and facilities imperatively demanded by its rapid growth, THE AMERICAN ARCHITECT will move to new and commodious offices in the Thirty-ninth Street Building, 239 West Thirty-ninth street, on July 1, 1908.

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MAY 13, 1908.

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Additional:

College of the City of New York—
Rear of Tower, Main Building.
Parapet Wall and Roof Over Triforium.
Main Building.

WHILE of comparatively small proportions, the location of the fire which occurred recently on the eighteenth floor of the Tribune building in Chicago renders it of unusual interest and significance. Much has been written of a more or less speculative nature concerning the probable effect of a fire becoming well kindled in the upper portion of a modern skyscraper, but actual demonstrations have been rare and imperfect. This fire, fed on lumber and quantities of paper and books, although of sufficient intensity to fuse wired glass, was confined to three small rooms. Indeed, the fact of its having spread beyond the room in which it originated was probably wholly due to windows constructed in the fire-proof partitions. That there was no damage done to the structural members of the building would seem to be strong evidence of the safety of our high buildings if well and properly constructed.

ANOTHER feature of the fire-menace in tall buildings, which has received much attention from the daily press, is the supposed difficulty in supplying water under adequate pressure for use in fire fighting on the upper floors of modern skyscrapers. Obviously, there is a limit above which it would be impossible or at least impracticable with present devices and equipment to successfully cope with a fire of any considerable magnitude or intensity, but that the limit is considerably above eighteen stories is evident from the Tribune fire, where, although five engine companies were called out, only one was needed to supply ample pressure to the stand-pipe in the building from which lines of hose were taken off and streams of water played on the fire, to such good purpose that at no time was there apparent danger of the flames spreading beyond the locality where they originated. With the very conclusive and satisfactory results of this interesting and instructive fire test of tall buildings before us, it would seem that a disastrous conflagration in any except possibly one of the few buildings exceeding twenty-five stories in height would do little more than demonstrate a case of inferior fireproof construction coupled perhaps with inefficient fire protection.

THE completion and operation of the first subway connecting Brooklyn with Manhattan and the Bronx marks a new era in the development and expansion of that borough. Undoubtedly the establishment of something approaching rapid transit, affording at the same time some measure of relief from the intolerable conditions growing out of the grossly inadequate accommodations supplied by the bridge trains, will be the means of immeasurably increasing Brooklyn's importance, both commercially and as a residential community. While only a beginning has been made by the completion of this first subway, it is reasonable to believe that within a comparatively few years the borough will be equipped with a comprehensive system completely transforming the Brooklyn that has so long struggled under adverse transit conditions.

THE completion of the Pennsylvania terminal improvements with the East and North River tunnels will indubitably have a great and far-reaching influence and effect on the improvement and development of a hitherto unimportant section of Manhattan Island. The drift of business and the general trend of improvements which for more than a score of years have been steadily northward, now, by virtue of these undertakings, bid fair to halt and expand or broaden between Twenty-third and Forty-second streets. When the new tunnels are completed not only will vast numbers of visitors from distant points be brought to this section of the city, but thousands of people from New Jersey and Long Island will demand stores, offices, restaurants and places of amusement located convenient to the railroad terminal. It would seem, therefore, that we might reasonably expect to see a new center of activity develop within a few years, and until the demands of business consequent to this development have been satisfied, little of business expansion along the old lines, extending always to the north, need be anticipated.

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AND

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Vol. XCIII.

WEDNESDAY, MAY 20, 1908.

No. 1691.



VIEW OF MAIN BUILDING FROM SOUTHEAST.

College of the City of New York

(Concluded)

The grades of the four city blocks which form the site for the College were peculiar. Their general levels were very much sunken from the streets which cut through the plot. These streets had evidently been graded to their present levels several feet above the general levels of the adjoining lots. This condition at once offered the possibility of a feature which has proven to be one of the most important and successful ideas in the planning of the group; that is the subway which connects all the buildings. This subway, with a distributing pipe gallery adjoining it for steam, electricity, etc. (from the power plant under the Mechanical Arts building), extends about fifteen to twenty feet in front of the smaller buildings approximately on the level of the basement or ground floors of the buildings and passes under the two streets, providing a well lighted and heated corridor for access in rainy and cold weather. The space between this subway and the buildings forms open courts which furnish the

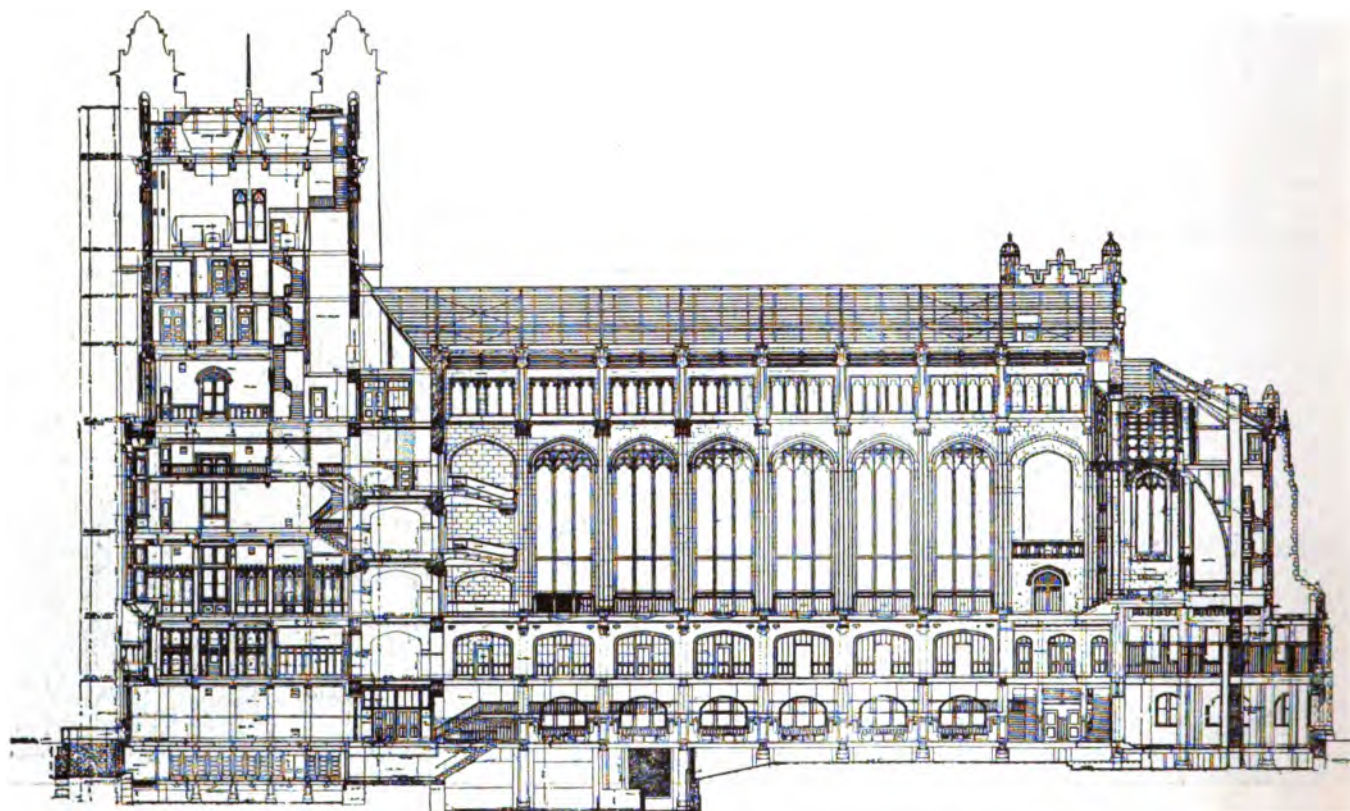
best of lighting, not only to the subway passage itself, but to the basements of all the buildings. By this means it is possible to use the basement floors of all the buildings for the same valuable purposes as the upper floors, thus avoiding the usual waste of this space caused by insufficient lighting and ventilation.

Before the buildings themselves were planned a contour map was made and several hundred holes were bored locating the levels of the rock over the entire plot. Whether it resulted from the serious study of the requirements relative to these rock grades or whether from good fortune, it is none the less the fact that nature herself seemed to have been aware that the College of the City of New York was to locate there and provided accordingly. Had the rock been planned to order it could not have been better suited to the purpose than it seemed to be after the many requirements had been adjusted to its contours. The amount of rock blasted out

of the foundations was about sufficient for the construction of the walls of the buildings. The planning of the buildings to suit these rock contours was one of the most interesting studies of the entire problem.

To carry out the unusual scheme of color and material an architectural style was developed along Gothic lines in keeping with the ruggedness of the site. This selection of style with its buttresses and piers was found adaptable to modern steel construction, and permitted large window openings where a great amount of light was required; special attention was given to scale and large masses of wall were left unbroken wherever possible and where loss of light was not a detriment. The grouping of ornamental parts and details on each build-

trimmings and ornaments made it possible to use abundant and bright ornamentation to offset the simple, though strong stone body of the walls. In the vertical and horizontal elements are used typical Gothic molds, the horizontal being emphasized by mullions across the windows, and the panels occasionally filled in with plain masses of creamy gray. Some of the broad horizontal bands carry conventionalized leaf ornaments alternating with grotesques. Buttresses terminate in gablets and occasionally in ornamental pinnacles. The larger arches often spring from bosses of leaves or from grotesque figures. Panels also frequently contain shields carrying some emblem or design which in every case was made to represent some appropriate subject. The parapet fin-



MAIN BUILDING—LONGITUDINAL SECTION THROUGH THE GREAT HALL.

ing was studied not only in relation to the building upon which it occurred but likewise in relation to the effect of the group as a whole.

The ornamental details of the buildings were very carefully studied and well executed and the great variety of these details occupied months of study and thought. The underlying idea in the treatment is that each principal ornamental detail, besides serving as a decorative spot, shall mean something. The distinctive purpose of each of the five buildings is expressed in its decoration, particularly so, in the grotesque cornice figures. Of these grotesques there are some six hundred different designs modeled from drawings made by the architect. On the Academic building these figures suggest the beginnings of higher education, but those on the main building represent the more advanced studies and professions; those on the Chemical building are industriously engaged in mysterious experiments; the quaint little mechanics on the Mechanic Arts building are busy with their tools, while the little men on the Gymnasium appear in all sorts of quaint and ludicrous contortions.

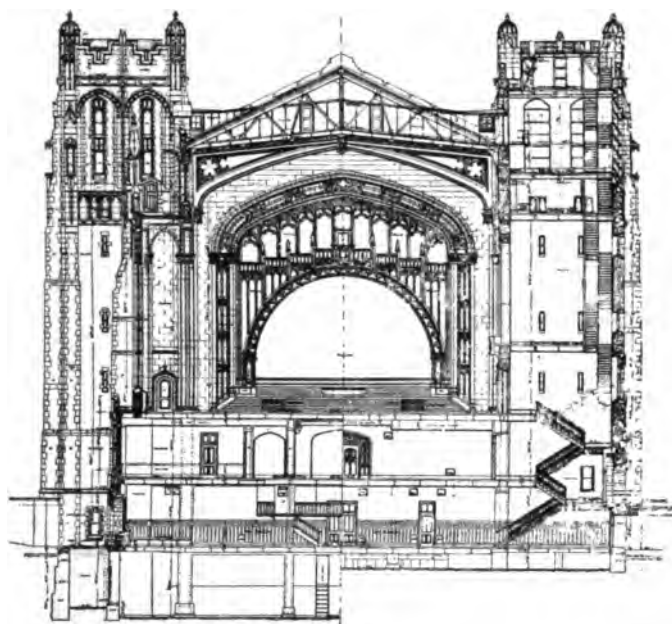
The selection of terra cotta instead of stone for the

ish of the walls admits of a variety of treatment. These are sometimes battlemented, and as they rise in their elevations, the ornamentation is made more ornate, as is seen more particularly in the towers of the Main Building and in that of Townsend Harris Hall—those of the Great Tower being particularly designed with the idea of blending into the sky.

The windows of all class rooms are glazed with single sheets of plate glass in order to secure a maximum amount of light; this is a slight departure from the established precedents of the style of buildings, but the large windows of the assembly halls and many of the smaller ones at entrances and in towers where excessive light was unnecessary have the characteristic leaded glass work.

The interior ornamentation is limited but interesting. A few corbels in some of the lecture rooms relieve the rigidity of the girders, and in the principal passages of the main building, the executive offices, the faculty room and the large assembly halls, there are corbels and other ornaments which, while sometimes merely conventionalized forms, often suggest steps in mental or physical de-

velopment or illustrate fables. All the corridors and stairways have been wainscoted with dark green dull finish tiling, except those of the concourses, which have



SECTION B-B

MAIN BUILDING—TRANSVERSE SECTION THROUGH THE GREAT HALL.

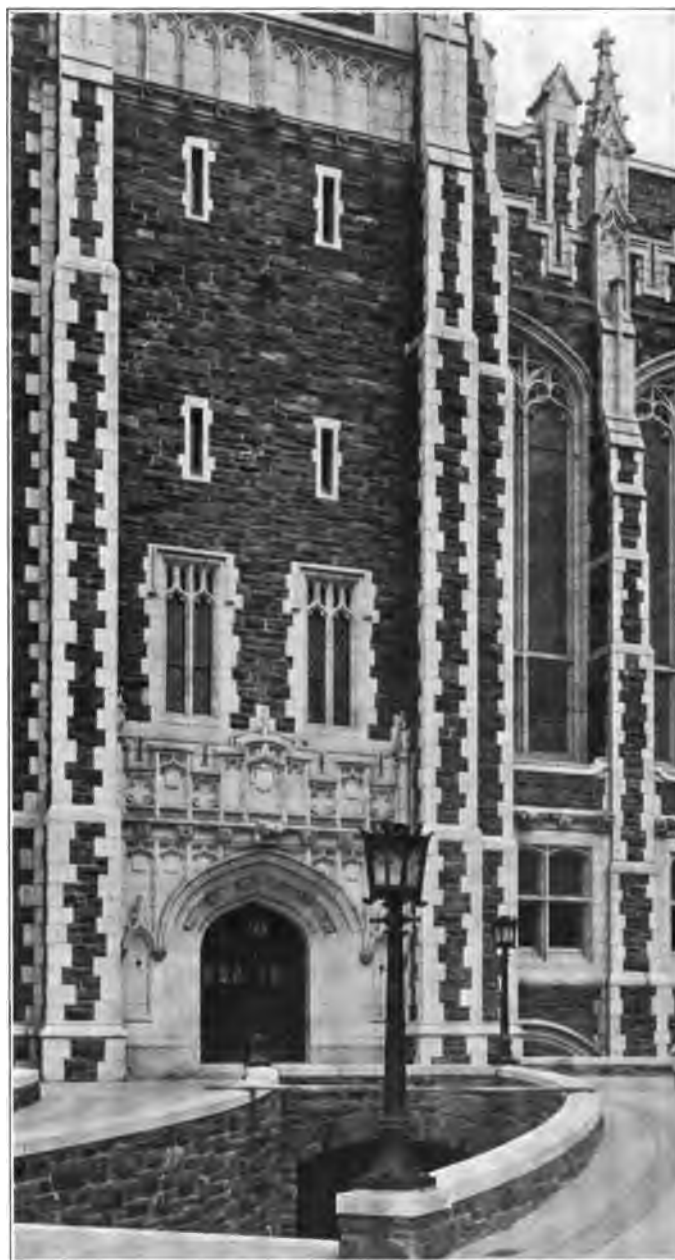
white glass tiles. The woodwork is simple, of plain oak stained a warm brown and coated with a dull wax finish. The walls and ceilings are slightly tinted to harmonize with the oak and tiling. More elaborate treatment is appropriately found in the woodwork and walls of the offices, the library, the faculty room, the museums and the assembly halls. Before any exteriors were designed many months were spent in visiting various institutions gathering the data through this means and by conferences with the professors and their assistants in the various departments.

The problem executed by the architect was instigated some ten years ago; its full conception and execution has made necessary some 4,000 interviews between architect and clients and required 2,000 drawings and 10,000 prints for execution which placed together would extend about eight miles of an average width of three feet.

Throughout the study of all the buildings the design was made to meet the natural contours and surrounding ground so that the ultimate effect would be as far as possible that the buildings should grow out of their setting. The interior requirements were grouped in sections so that the exteriors could as far as possible express the interior groupings. For example—the Main Building which follows the curve of St. Nicholas Terrace (with its great retaining wall) on which it has a frontage of 600 feet, from which it extends back a depth of 300 feet in the center, is divided into five distinct parts and the scale of the exterior of these several parts expresses quite clearly the character of rooms within each. On the Campus side of the central part rises the Great Hall, clearly expressed by its large buttresses and tracery windows, each window being more than 30 feet in height, while underneath this with windows extending the full space between the buttresses of the Hall, is located the Library and several classrooms. Still beneath these on the ground floor is located the concourse or meeting place of the students, which contains in ad-

dition to several thousand lockers, alcoves with seats and tables for the social use of the students during luncheon hour. Flanking the Great Hall are the two small towers of the Main Building which contain the organ lofts. The top of one tower is used for astronomical purposes and the other for the great bell cast by Meneely of Troy. This bell has a tone of B-flat and is six feet in diameter, weighs three and one-half tons, and is controlled from the College Secretary's office, being used primarily to give signals at the beginning and ending of each recitation period.

On the Terrace side of the central section of the main building rises the Great Tower, in whose generous dimensions are located (in passing from the ground floor upward) the luncheon room (adjoining the student's concourse), the executive offices, faculty room, mu-



MAIN BUILDING—ENTRANCE FROM CAMPUS.

seum of natural history, faculty's social and lunch rooms, janitor's living quarters and the tank and exhaust fans of the ventilating system which pour out foul air from the entire building at the top of the tower.

By referring to the illustrations of this tower one can readily see that the larger rooms are expressed on the exterior by correspondingly large penetrations of the walls, and that in the janitor's quarters and fan room,



TERRA COTTA DETAILS—MAIN BUILDING.

the penetrations are materially reduced. There is no waste space in any of the several towers of the buildings.

The two curved or curtain wings of the Main building extend between the central sections and the end wings. These readily express by their groups of small windows that the rooms within are divided into small unit modules. These wings contain almost all the recitation rooms of this building, each accommodating one section of about twenty-five students. They also contain professors' rooms, small laboratories for physics and natural history each for one section of students; toilet rooms, etc.

The two end sections or wings contain the lecture rooms, each seating 200. These are expressed by large windows and extend through one and a half stories, giving a higher ceiling made necessary by their size and stepped seats. In the cellar of the central section and in the two end sections there are located fans which force fresh air into all the rooms of the buildings.

To the west of Convent Avenue is the quadrangular Campus, on three sides of which are the four smaller buildings—the Gymnasium on the south, Townsend Harris Hall and the Mechanical Arts buildings on the west and the Chemical building on the north. Of these, Townsend Harris Hall is next in size to the Main building. The

façades of this building readily express the interior plan, for with the exception of the Assembly Hall, distinguished by the large windows on the Amsterdam Avenue front and the smaller laboratories and their supply and apparatus rooms located in the tower and central portion of the Campus façade, the building contains only recitation rooms. In the ground floor, however, there is a large concourse and luncheon room for the students.

In the design of the Gymnasium Building every effort was made to express strength without interfering with the essentials of light and air. The massive corners, in which are located the four stairways, are suggestive of great strength, and form abutments for the buttressed wall between, in which the maximum amount of light was obtained for the large exercising room without weakening the æsthetic strength of the façade. In this building and in the Mechanical Arts building, the use of the buttress gave the maximum amount of light and made it possible, without detriment to the design, to fill the wall space between completely with glass and still retain the effect of strength and solidity. To accomplish



ENTRANCE FROM CAMPUS—TOWNSEND HARRIS HALL.

this the wall piers are turned around on end and form ideal piers for the concentrated loads of the steel girders. In the Gymnasium these piers support the roof trusses spanning the large exercising room. The buttresses of the

Gymnasium die into the solid masonry base, giving an additional effect of strength. In the basement of this building is located a swimming pool twenty-eight by one hundred feet, on the sides of which are banks of observation seats, shower baths, etc. Above are two floors containing hand ball courts, lockers, shower baths, several smaller rooms for physical measurements, a lounging room and library, etc., etc. The entire top floor is devoted to general exercise, and around this room is located a running track, seventeen laps to the mile.

In the design of the Mechanical Arts building there were some unusual problems presented. First it was necessary in order to express the true character of the building to give it the general aspect of a factory and at the same time keep it in proper dignity and harmony with the other buildings. Then, again, there was the usually unsightly boiler flue from the power plant to contend with. It is the custom to place this monstrosity off in one corner of the grounds and try to forget that it exists. Not so with Mr. Post. He met the problem squarely. He said, "Let us place this stack in the most conspicuous place in the building and make an ornamental feature of it." His argument was that such a large feature cannot be lost from sight so he would not try to do so. It was a bold idea, but a most successful one, and seemed to be the accent which was needed to place this low building in proper scale with its higher neighbor, Townsend Harris Hall, which, with its large tower, occupies a symmetrical position on the Campus with the Mechanical Arts building.

It is generally conceded that the Mechanical Arts building, with its broad windows and tall chimney, suggests the college workshop. In the deep basement is the battery of six great boilers, storage space for coal, four large dynamo engines, the switch board, pipe galleries, pumps, fans, and other appliances for furnishing all the buildings with power, heat, light and ventilation. The upper part of the building is given to instruction in mechanics. On the first floor are a forge room, engine and pump room and a laboratory of applied electricity. The second floor contains the machine shop for metal work and a wood turning and carpenter shop. In the attic are the store rooms, steam condensing apparatus and ventilating fans.

The exterior of the Chemical building was designed after many interior plans were studied and re-studied, and it expresses in its general exterior character the laboratories in the wings and the larger rooms in the central portion which consist of a museum on the Campus façade and large lecture room on 140th Street. Possibly no other college has so complete a building for teaching this important subject. In arranging the interior, the plan of small laboratories, each to accommodate one section of twenty-four students, has prevailed. There are twelve laboratories for general work, many smaller ones for the specific branches of the science, rooms for research work, four recitation rooms, a large lecture room and also a small lecture room, a museum and a library, besides offices and store rooms.

The construction of the buildings throughout is of the strong supporting masonry wall, steel floor beam and modern fireproof type of building.

Can any forms of self-supporting wall construction be formed whose distinctive features are better suited to the requirements of modern fireproof construction than those provided by Gothic architecture? Can any pier be better

devised for the support of concentrated floor loads than a graceful buttress diminishing in thickness toward the top where the load becomes lighter? There are those who claim that our modern construction is a false adaptation to Gothic work. In the College of the City of New York not by reason of forced adaptation, but in the nat-



CORNER DETAIL—GYMNASIUM.

ural course of the æsthetic study, it was found that the proper exterior proportions of the buttresses to the façades gave the necessary pier areas for the structural requirements. An examination of the structural drawings will show that the construction of these buildings is honestly expressed by their exterior façades.

In the matter of furniture and equipment an unusual demand was made requiring the architect to supply designs for chairs, desks, tables and cases. These have been designed along Gothic lines, yet simple and strong, suited to the various purposes of a complete college outfit. The student's chair, the result of careful study, is recognized as a model of simplicity and comfort. In the departments of physics, natural history, and drawing the work tables of the pupils are complete in every detail of equipment. Those in the Chemical building vary in accordance with the character of the work and are furnished with every device and supply which may aid the



CORNER DETAIL—TOWNSEND HARRIS HALL.

student. In the shops in the Mechanics Arts building the equipment includes the most modern machinery for use and illustration. The power plant of the college, located in the basement stories of this building, has been designed especially with a view toward demonstration of various types of machinery, etc., to the students.

The finishing and furniture of the Assembly Halls, Library, Faculty Room, Executive Offices, etc., is appropriately distinguished by ornamental features, rich in effect, yet sober and dignified. The adjustable shelving of the book-stacks has been specially designed as have been all the equipment throughout the buildings.

The chairs for the Great Hall have been made in keeping with its architecture and are finished with a dark, fumed oak effect in harmony with the whole color scheme.

The electric fixtures themselves were especially designed in a style in keeping with the buildings and in various technical rooms special devices were made for unusual requirements. The usual conveniences found in large modern buildings, such as call bells, telephones, elevators, mail-chutes, clock and watchman systems, have also been installed.

The heating system is direct steam radiation controlled by thermostats in each room and passage, while the ventilation is accomplished by driving temperate fresh air into each room and exhausting the used air. Every room throughout is ventilated. The lighting is exclusively electric. In all the buildings there are intricate systems of flues, pipes and wires, but none can compare with that of the Chemical Building, which contains a veritable network of them. In the planning of the buildings the architecture was, in all instances, adapted to practical requirements.

At the time the appropriation for building the college was under consideration by the Board of Estimate and Apportionment of the City, Comptroller Grout suggested that on account of the fact that the City of New York owned no hall larger than the aldermanic chambers for holding public meetings and gatherings, that it would be well to embody in the City College a Great Hall of assemblage, which should have an architectural treatment in keeping with the dignity of the city, and with this end in view, the architect was instructed to give special attention to this feature and to embody into it such architectural features as would, in his opinion, give the desired effect and to make it of such size and scale as would meet these requirements. Extending back from the tower, as a result of this, is the Great Hall, 175 by 90 feet in size, 65 feet in height and providing a seating capacity of 2,300. Back of the speaker's platform is a large paraboloid containing a mural painting representing an educational subject. Flanking the hall are two small towers which contain the organ lofts, in which is placed an organ as fine as any in this country.

It is not intended that this college shall be compared with universities, for the trustees have no ambition other than developing a college strictly within the limits of other institutions. From the beginning the problem was studied on broad and conspicuous lines. Not only were architects consulted, but experts in various lines were called in. The executive men of the architect's staff visited a number of the leading colleges and universities in search of the latest ideas and equipment before the preparation of the plans was begun, and there have been incorporated in this college every detail and practical requirement of importance which has been requested by the various professors and the men connected with them on the staff of the college.

The constant effort, from the inception of these buildings, has been to plan them so as to meet every technical requirement. With this idea ever in mind, the architects have sought to avail themselves of all the information obtainable, and with this provided, to construct a series of buildings for the purpose intended that would answer every requirement of a modern educational institution of its class.

ARTHUR EBBS WILLAUER.

Recent Court Decisions

The Colonial Investment and Loan Company of Toronto, Can., have lost in the action brought against them by Messrs. Bond & Smith, architects, of Toronto, for the recovery of compensation for services in preparing plans and drawings in 1905 and 1907. Plaintiffs claimed \$2,260, being 1 per cent. on an estimate of \$31,000 as the cost of proposed alterations of buildings, and 1 per cent. of \$195,000 as the cost of proposed new buildings. Neither the alterations nor the buildings were proceeded with, and the defendants set up a special agreement stipulating that the whole amount of plaintiffs' compensation would not exceed \$300 or \$400, that sum to include each set of plans. They denied that they were informed or that they had any knowledge of what the plaintiffs called the "usual fee" of architects. Judge Britton decided at Toronto that there had been a misunderstanding. His lordship was not at all sure that Mr. Smith would have accepted the work had it been as plain to him, as it was to the company, that \$300 or \$400 was to include the work. Although the company supposed and intended that that sum should include everything if the work were not proceeded with, they did not say so to Mr. Smith. Hence plaintiffs were not bound by what was by the defendants intended. Judgment was passed in favor of plaintiffs for \$650 with costs.

Palmer & Hornbostel, New York architects, won in the Supreme Court of Pennsylvania their suit against the Central Board of Education of Pittsburg. Palmer & Hornbostel alleged breach of contract, which the Supreme Court allows.

The plaintiffs contended that the Central Board of Education decided to build a new high school and that a committee of directors was appointed to select, subject to the approval of the board, a competent person as architect to prepare plans for the proposed building. It was set forth by the plaintiffs that five architects in Pittsburg and the same number outside the city were invited to compete. All but one of the architects selected accepted the invitation and announced their intention to enter the competition. The statement is made that the committee selected the plan of another firm as the best and that the central board was asked to approve the selection on December 4, 1906. This report was rejected and a motion to reconsider the same was made and laid on the table.

Believing that the action of the board was a violation of contract with the nine architects asked to compete, an injunction was obtained restraining the directors from proceeding to award the plan for the construction of the high school and also restraining the board from selecting an architect outside of the nine architects who entered into competition.

In granting the injunction it was necessary for the court to take the stand that a contract existed between the central board and the competing architects. This was the ruling that was confirmed by the decision of the Supreme Court.

Jury's Criticism of Class B Plan Problem

The judgment of the Class B problem, "An Aquarium," took place on Thursday evening, May 14. There were sixty-one projects rendered, of which number twenty-seven received mentions and four first mentions.

The work as a whole was interesting, as the program lent itself to several distinctly different solutions.

It may be said that the plans which showed clearly the three divisions called for in the program, and in which the Aquarium proper dominated the compositions, met with most favor. The manner of lighting the main hall was seriously considered, and those projects in which the better part of the light came through the tanks, or in which some such lighting system was possible, were preferred.

In many cases the rendering was deficient, and in many others the construction of the domes and roofs was insufficiently shown or impossible. Greater care should be taken in presenting the sections, no matter how slight the indication may be, the constructive features should be constructable.

CLASS B PLAN PROBLEM

May 15, 1908

AN AQUARIUM

(By W. A. DELANO)

G. H. Pohle	City	Atelier	Hornbostel	M.
R. Nicolais	"	"	"	M.
W. J. Cherry	"	"	"	M.
R. Hume	"	"	"	M.
Geo. Schonewald	"	"	Jallade-Prevot	M.
M. J. Schiavoni	"	"	"	M.
A. J. King	"	"	"	M.
H. Bruns	"	"	Barber	M.
O. Hillerns	"	"	"	M.
F. O'Keefe	"	"	"	M.
F. H. Brendle	"	"	"	M.
L. J. Cowley	"	"	"	M.
D. D. Ellington	Philadelphia	Atelier	T Square Club	M.
D. Bernardi	"	"	"	M.
T. B. Herman	"	"	"	M.
F. L. Morgan	"	"	"	M.
J. N. Hettle	"	"	"	M.
A. H. McGrail	"	"	"	M.
F. W. Haupte	"	"	"	M.
H. F. Cunningham	Washington	"	Wyeth	M.
R. G. Finkenbauer	"	"	"	M.
J. Moscowitz	City	"	"	M.
F. C. Walker	Chicago	Atelier	Bennett	1st Mention
F. C. Walker	Washington	"	Geo. Wash. Univ.	M.
L. G. Culhane	City	"	Hornbostel	1st Mention
M. F. Mayer	"	"	"	M.
W. Jones, Jr.	Pittsburgh	"	Carnegie Tech. Sch.	M.
M. M. Steen	"	"	"	1st M'n
J. England, Jr.	"	"	"	M.
P. H. Sterling	"	"	"	M.
F. H. Smart	"	"	"	M.
L. C. Wentworth	"	"	"	M.
G. M. Stoner	"	"	"	M.
V. A. Rigau mont	"	"	"	1st M'n

CLASS B ORDER PROBLEM

May 15, 1908

AN ARCADE

(By H. W. CORBETT)

L. Sherwood	City	Atelier	1123 Broadway	M.
Muir, W. C.	"	"	Ewing & Chappell	M.
C. E. Weatherstone	"	"	7 West 38th St.	M.
E. D. Wagner	"	"	345 Fifth Ave.	M.
J. Kilgour	"	"	"	M.
J. Edgar	"	Atelier	Corbett	M. Placed
E. Vincent	"	"	"	M.
H. Ogden	"	"	"	M.
M. L. Pentz	"	"	"	M.
L. Langworthy	Boston	"	Boston Archi. Club	M.
F. Muller	City	"	Hornbostel	M.
C. N. Conrad	"	"	Barber	M.
E. M. Wright	"	"	"	M.
E. Grzybowski	"	"	"	M.
Phillip Lamm	New Orleans	"	Jallade-Prevot	M.
E. G. Walker	Chicago	"	Stone Bros.	M.
H. S. Maynard	"	"	Bennett	M.
D. J. Dreyer	"	"	"	M.
R. Wolf	"	"	"	M.
A. Garland, Jr.	Washington	"	Geo. Wash. Univ.	M.
G. A. Wurtaugh	Brooklyn	"	"	M.
H. M. Ferriss	St. Louis	Atelier	Wash. University	M.
L. J. Baer	"	"	"	M.
H. W. Hall	"	"	"	M.
S. G. Stout	"	"	"	M.
E. A. Knox	"	"	"	M.
D. Elliott	Pittsburgh	"	Car. Tech. Sch.	M. Placed
E. W. O'Brien	"	"	"	M.
B. A. Haney	"	"	"	M.
P. J. Muhr	"	"	"	M.
W. H. Schaefer	"	"	"	M.
D. Allison	"	"	"	M.
A. H. Gilkison	"	"	"	M.
J. A. Yellig	"	"	"	M.
T. J. Raguere	"	"	"	M.
A. M. Dietrich	"	"	"	M.

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NOTICE OF REMOVAL

In order to secure adequate space and facilities imperatively demanded by its rapid growth, THE AMERICAN ARCHITECT will move to new and commodious offices in the Thirty-ninth Street Building, 239 West Thirty-ninth street, on July 1, 1908.

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MAY 20, 1908.

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St. Nicholas Terrace, Entrance to Main Building.
Entrance to Mechanical Arts Building.

AMONG the various forms of decoration that have found favor with architects of the past there is none, perhaps, that has been used with more effect or that to-day possesses greater possibilities of artistic application than that in which heraldry is introduced as the basic element. Probably a thorough knowledge and a judicious and skilful application of the rules of the practice of heraldry contributed quite as much to the charm of mediæval architecture as did the excellence of its proportions, and the skilful adaptation of part to purpose which characterized that period; and it is to be hoped that the increased appreciation of things mediæval which is noticeable everywhere will lead to a more general use of heraldic forms. Nor is such use properly restricted to major structures, for that even a simple architectural composition can be enhanced greatly both in richness of effect and interest by the skilful introduction of appropriate heraldic decoration, there is abundant evidence.

THE ancient figure "as free as air" was doubtless apt in the country where it originated, but that the conditions do not render it susceptible of general application in New York a number of owners of modern high buildings could bear witness. The widespread in-

terest taken at this time in the subject of various restrictions which may be imposed upon builders of lofty structures in order to insure better light and air in the congested districts of this city, and our consequent inquiry into present conditions, has brought to light the existence of what at first thought would seem to be a somewhat novel industry—that of trafficking in light and air.

EXAMPLES of buildings, certain offices or lofts in which are lighted solely by windows giving directly upon the adjoining property by virtue of the building having been erected upon the party line, are not of nearly so infrequent occurrence in New York as are owners of adjoining property who have not realized their neighbors' vulnerable position under such circumstances and profited by it. It would seem as though an architect would hesitate long before adopting a plan for a building by which some parts of it would necessarily depend upon the adjoining property over which his client had no control for a supply of light and air. That this has been done in so many instances is probably due to the owner's avarice stimulated by the belief, based no doubt upon some real or fancied knowledge of the situation, that the adjoining property would remain unimproved in so far as any effect upon the proposed building was concerned for a long term of years, and his consequent positive instructions that the building be planned taking advantage of this favorable condition.

AS a notable instance of the character referred to might be cited the case of a certain prominent building erected not many years since near the lower end of Manhattan Island. The circumstances in connection with the property adjoining this operation were such that the promoters felt confident it would remain practically unchanged for many years, for not only were there very substantial six or seven-story buildings on the property, but the heirs to the estate which owned it seemed to be involved in hopeless litigation, promising to continue indefinitely. Consequently the architect is reported to have been definitely instructed to plan the most efficient building possible, utilizing the light from the adjoining premises on two sides above the existing buildings. This was done and in due course the building was completed and tenants found for the offices. The owners, however, had hardly begun to enjoy the income from their improvements when they were surprised by the report that the heirs to the property adjoining had arrived at an agreement and had dropped their various suits at law. Moreover, they had devised means whereby the executors and court permitted them to improve the premises in question. This they proposed doing and straightway plans were prepared for a structure which if built would not only overtop the recently completed building, but would effectually seal the major portions of its office windows on two sides from the eighth story to the roof. With remarkable celerity these plans were filed and a permit to build secured; but just at this juncture various important conferences were held between the parties in interest, and finally just before active operations were to be begun it was decided to postpone the improvement. It has been stated, however, with some semblance of authority, that the owners of the prominent building have found the fixed charges in connection with their investment somewhat higher than they originally anticipated.

THE AMERICAN ARCHITECT

AND

BUILDING NEWS

Vol. XCIII.

WEDNESDAY, MAY 27, 1908.

No. 92



POOL BANK—PORT SUNLIGHT, ENGLAND.

Eighth International Housing Congress, London

By GEORGE B. FORD

THE New York papers have of late been giving a great deal of space to the "Exhibit of Congestion of Population in Large Cities," held in the Museum of Natural History in New York. It is the first attempt that has been made in America to show people the evils and dangers of overcrowding in large centers. It has impressed thinking people, as they never have been impressed before, with the horror of housing conditions as they exist to-day in a number of American cities. When we see graphically portrayed before us so many phases and instances of what this congestion really means, we are aroused to a keen sense of duty to see what we can do to alleviate these conditions. We begin casting about to see what has been done to solve these questions. If we turn to the architectural magazines we find practically nothing on city housing for the poorer classes except the recently published plans of the Phipp's houses in New York, and even here the rents are much above the reach of the ordinary laborer who receives only from \$600 to \$800 per year. When we look for suburban or country housing, together with the means of transportation to and from work, we are no better off. We turn to the economic and sociological magazines only to find that there is almost nothing of concrete constructive value.

We will find something more of interest in the books and reports to be found at the American Institute of Social Service in New York or in Chicago, or in the much larger and more comprehensive collection of the Museum and Library of Social Ethics at Harvard University. In this latter collection one may see a number of plans and photographs of model dwellings and appurtenances, both urban and suburban, American and European. It is at least much nearer being exhaustive than any other collection in America.

When we come to inquire what has actually been done to better living conditions in our large cities in America we are perhaps surprised at the little accomplished. In New York there are the "White" Tenements in Brooklyn, the City and Suburban Homes' houses in Manhattan, the New York Fireproof Tenements Company house, the Phipps' houses, and several smaller ones, the three Mills' lodging houses, and the two Municipal Lodging Houses, representing a total investment of only some \$8,000,000. (London has invested nearly \$150,000,000 to ameliorate conditions not one quarter as bad as ours.) In Boston some half a dozen model houses have been built. In the other large cities there are only a few scattered examples. In suburban and country housing we find experiments like "Garden City," Long Island, or the industrial vil-

lage of Hopedale, Ludlow, N. Plymouth, Mass., National Cash Register, Pullman and some others, but they are all more or less experimental. Then our natural



MUNICIPAL TENEMENTS—LIVERPOOL

impulse is to look to the older civilizations of Europe to see if they have found any solutions for these problems. Great interest is taken in the subject by the European countries, both by individuals and by municipalities, an interest that has been continuing over many years and which is constantly growing. Eight International Housing Congresses have been held in various cities of Germany, France, Belgium and England, within the last fifteen years. Of particular interest is the eighth, held in London, where five hundred delegates and many more interested peoples, coming from nearly every country of Europe—fourteen national governments and a great many municipalities being represented officially—gathered together in Caxton Hall for the exchange of ideas. Each speaker had some special phase of the subject, which from his exhaustive study, his experience, and his official capacity was presented with great interest. There were seven American delegates at the congress, all of whom had gone over especially for this purpose. The writer regrets to say he was the only architect among them. The long discussions and exchanges of experiences, the things seen on trips about London and to places like Garden City, Sheffield, Bournville, Port Sunlight, Liverpool, etc., and especially the inspiration and enthusiasm of it all can never be appreciated without having experienced it. The next congress will be held probably a year from this summer, but at what city has not yet been decided.

In the three or four days of the congress itself many features of the housing problem were discussed. They grouped themselves under the following heads:

Housing Inspection.

The Land Question.

House Building and Management.

House Finance and Taxation.

Town Planning.

Transit.

Rural Housing.

Only two of these subjects may be actually architectural, yet a general acquaintance with each is necessary to a broad grasp of the question.

The congress sat during three mornings and afternoons in Caxton Hall. Under each subject several papers were read. Then followed an open discussion.

The points brought out were many and varied, but some of them stand out more strongly than others, as denoting the tenor of the congress. Perhaps more prominent than any other feature of the congress was the one that individual effort at ameliorating the condition of the home was utterly inadequate, that such effort must be collective and organized in order to be effective, and that as we already had such collectivity and organization in the governments, municipal, state, or national, these were the natural agents of reform. This does not mean socialism, as may appear at first glance; it does not necessarily mean municipal ownership; but it does mean the passing of laws so that it will become possible and advantageous for private companies to enter this field. In Germany are the best examples of this control by government. There, about most of the larger cities, the governments are pursuing a farsighted policy to provide for growth and expansion. They have formed carefully-considered plans for a wide belt all about the present thickly inhabited part, allowing for avenues, streets, parks, recreation grounds, shops, factories, public buildings and means of communication. They have secured control



REAR OF MUNICIPAL TENEMENTS—LIVERPOOL

of large tracts of land in these belts, thereby taking it for all time out of the hands of speculators. They have furthermore devoted considerable attention to site-plan-

ning as well as to town-planning, so as to allot sunny rooms and a garden to each house, always with a care to having not more than twelve houses to the acre. To



MUNICIPAL COTTAGE—SHEFFIELD.

allow for varying classes of dwellings, parts of the belts are treated very differently, especial stress being laid, however, on the quarters for working men to give them the best accommodations within their means. In this connection the German cities have been careful about their building "bye-laws" as to limits of height and area of lot covered, inspection, etc.

Another almost unanimous feeling of the congress was the desirability or rather the necessity of getting people away from the city into the country. It was recognized of course that conditions of city life must be dealt with as they exist; that the municipality should have the powers requisite to condemn unsanitary property, individually or collectively, even to the extent of clearing certain areas radically. As to whether the example of the London County Council in providing, as a municipality, for the rehousing of those evicted in slum clearance should be generally followed there was some doubt.



MUNICIPAL COTTAGE—SHEFFIELD.

There was no doubt as to the duty of the government in seeing that such new dwellings as were erected should give the maximum of light, air, sanitary arrangements

and homelikeness; that the government should give such builders every inducement to that end, either by the abatement of taxes over some five to twelve years, as in Italy and France, or by the legalizing of loans by savings banks on such buildings as security to a fifth of their deposits at a stipulated low rate of interest, as in France. Yet with all this discussion of the city problem it was treated as of secondary importance to the desirability of attracting people to such a place. Many cases were described as to where and how this had been done and with what results. Belgium leads in this, due chiefly to its wonderful systems of transit for the working man or mill hand; for this problem of transit is one of primary importance, the Belgians claiming that it has been the exclusive cause of the lack of congestion in their large cities. The government owns nearly all the railways, charging the workman a little over one cent per week per mile that the man lives from his work. This has further resulted in a surprising increase in the distance travelled, in Liege, for instance, over a quarter of the communities living at over thirty-one miles away.

It was unanimously agreed that life in the country conducted far more to a happy family life, especially if the plot contained enough room for a garden. Many statistics were presented to show that on an average, every-



COTTAGES—BOURNEVILLE.

thing included, rural housing cost about half as much per room as block tenement housing. A lengthy discussion of this subject, with its practical features of who should own the land, how the laborer might buy his home, etc., naturally lead to the fascinating modern problem of "Garden Cities."

The garden city seems to be peculiarly English, so far, the experiment of Ebenezer Howard at Letchworth being unique. It is a most interesting study. Similar cities are in process of formation in France and Germany.

The conferences lasted three days, relieved by little trips about to the places of interest in the city itself. For, as has been stated, in London something like \$150,000,000 have been spent in ameliorating slum conditions. Chiefly were visited the London County Council structures, for the most part built to rehouse those evicted in slum clearances. Of these the great mass of thirty or forty big brick buildings on the Millbank Estate stand out as typifying the wholesale way in which a municipality may attack this problem. The houses are well-planned—from the standpoint of what the English workman demands—they are substantially built about a series of paved courts, but how cold and forbidding and institutional they are, grimy and black, as is everything in

London! The buildings are sanitary, the stairways are open to the outside air, there are many little appliances to make the place attractive, but what a mournful prospect,



MEETING HALL—PORT SUNLIGHT.

the thought of living there! What is true of these buildings is true of all the other groups of dwellings by the London County Council, though some of the most recent ones, as those just off Blackfriars' road in South London, are rather more attractive architecturally.

Another interesting feature in London are the men's lodging houses, either the Rowton Houses—the prototypes of the Mills Houses in New York—or the most recent London County Council Houses, though the more recent houses of the former company are still the best examples. The Rowton Company can house in their six large buildings some 10,000 people per night at sixpence per bed in a cubicle, or one shilling per separate room, with a reduction of five-sevenths by the week. The latest house opened recently on Arlington Road, Camden Town, is attractive both outside and in; everything possible has been done to avoid the inevitable institutional character, and with a certain success. The building, of brick and red and yellow terra cotta, is picturesque in mass, the general rooms, of which there are many, are low studded,



COTTAGES—PORT SUNLIGHT.

not too large, well lighted, treated in a homelike fashion in warm colors, with large open fireplaces at either end. They prove cosy and attractive. Another feature dear to

the heart of the English workman is the opportunity given him to cook his own dinner, for leading off of the main dining room with its serving counter, where good meals may be had at very reasonable prices, are several rooms or alcoves equipped with ranges, sinks and unlimited pans and pots, the use of which, fire and all, is quite free to the lodgers; and good use they make of it, for often the men are waiting, several to each of the many places. Despite all these attempts the thought remains, how forced it all is, how patronizing, how lacking in that desire of every human heart—a home!

And so, after three days in London, the delegates met on a Thursday morning in a splendid special train to start off on a three days' tour through England, where were visited Garden City at Letchworth, the new municipal houses in the suburbs of Sheffield, the model industrial towns of Port Sunlight and Bourneville. It was a most profitable trip, for it afforded an opportunity to see at first hand the results of city life versus country life, and to a certain extent the difference between municipal, cooperative and private ownership.

To look at Liverpool first, as here are conditions and solutions similar to those in London, in the Dryden Street and the Hornby Street areas, the latter dispossessing 2,400 tenants, block by block, and providing ac-



COTTAGES—BOURNEVILLE.

commodations for 2,600 on the same site at a trifle less rent than they were paying before. This area of ten or twelve blocks had been one of the most unsanitary in Liverpool, while now it is just the contrary. These houses, with their picturesque forms, their red and yellow brick and terra cotta, their extensive use of "wrot" iron (Liverpool municipal spelling), and their grass plots in front, are at least much more livable than those we saw in London. The apartments have the maximum of privacy, too, for each is entered from the balconies that we see in front of the buildings. To be sure gross rentals only pay the city 5 per cent. on the money invested, but as the buildings are very substantially built, with excellent circulation of air, much play room, good light and good sanitation, the municipality gains in good health, cleanliness and in improved morals for more than the 2½ or 3 per cent. net would show.

Even so it was a delight to leave the depressing atmosphere of the city and find ourselves shortly in that village, the criterion of industrial towns, Port Sunlight. The whole town, laid out by Lever Brothers, adjoining their soap works, has grown house by house, until it now accommodates at least 5,000 people. The houses are in every case rented, not sold, and rented at rates corresponding to those the employees would normally pay. Wandering

about this charming English town, with its never-ending variety in house and garden, half timber, brick, plaster, in many picturesque combinations, always in good taste, always seemingly regardless of cost, in their beautiful settings of lawns and shrubbery, the wonder was how the average operative could afford to pay even half of a reasonable rent for such accommodations. It was learned that Mr. Lever pretended to make the rents cover only the taxes and cost of maintenance, waiving any interest whatsoever on the capital invested. And not only this, but he has provided many things in the way of halls,



COTTAGES—GARDEN CITY.

lunch rooms, libraries, gymnasium, theatres, baths, schools, stores, recreation grounds and parks, all in the same charming English style. Mr. Lever says it pays, that is why he keeps on doing it; pays in better work he gets from healthy and cheerful operatives, pays in the perfect good feeling that exists between the employer and the employees.

From Port Sunlight the delegates travelled to Bourneville, a town like Port Sunlight, in that it was laid out entirely by one man about his great industrial plant, but differing from the former, as it is managed by a corporation, and that it pays between 4 and 5 per cent. net, and at rents barely larger than those at Port Sunlight. Wherein lies the difference? The houses are a little nearer together, but never over ten to the acre; there seem to be just as many public buildings, just as many trees and shrubs, lawns and parks; the difference comes in giving the people here a house, well but cheaply built, and consistent with their means, so that the people are independent and self-respecting, many of the houses being owned (or rather leased for 999 years) by the occupants.

Quite different was the impression of the municipal cottages three miles out from the center of Sheffield. Stark and cold, on the crest of a treeless hill, they looked what they are, institutional. Individually, from an architectural standpoint, they had some features that were not bad, but from the housing standpoint they were evidently not up to the standard.

Garden City at Letchworth, some thirty or forty miles north of London, has a peculiar fascination of its own. It is unique in many ways. Fashioned out of whole cloth in the mind of Ebenezer Howard, a London bank clerk, it has sprung up quite as if by accident in some almost uninhabited farming land, until now, barely four years old, it numbers 2,000 inhabitants and is growing rapidly. The idea of the town is to attract people from

the congestion of the city to the open, healthful life of the country. To quote from the first prospectus of the company: "The difficulties of dealing with the Housing Question in our overcrowded industrial centers becomes increasingly apparent with every fresh attempt at amendment. The expense is enormous, while improvement in one direction frequently increases the evil in another. The only satisfactory way out of the difficulty is to start afresh and establish a new town to which those manufacturers whose businesses admit of such removal may go.

"The exceptional features of this scheme are that the town is to be limited to a population of about 30,000 inhabitants, that the greater portion of the estate is to be retained for agricultural purposes, and that the dividends to shareholders are to be limited to a cumulative dividend of 5 per cent. per annum. In the event of a winding-up the shareholders would be entitled to no more than a return of their capital with a bonus not exceeding 10 per cent. plus any arrears of dividend. The advantages anticipated from this new departure in the development of a building estate are: Firstly, the provision of hygienic conditions of life for a considerable working population. Secondly, the stimulation of agriculture by bringing the market to the farmer's door. Thirdly, the relief of the tedium of agricultural life by accessibility to a large town. Fourthly, that the inhabitants will have the satisfaction of knowing that the increment of value of the land created by themselves will be devoted to their own benefit."

For the plan has made special provision for good sidings, sites for factories to the leeward of the town—there are already some ten factories here, including two large publishing houses—a belt about the town to be reserved for all time for agricultural purposes, besides the garden attached to each house. Good schools, churches, hotels, stores, etc., are in operation, and their future



TOWN CLUB HOUSE—GARDEN CITY.

development is all provided for. In fact, this forethought is everywhere evident with the intention of developing civic and family life along the best lines.

In the houses themselves there is a great variety, the larger part of them being most reasonable in price. Every year or two competitions for single, double and quadruple cottages of certain rooms each are held among the architects, and the winning designs are erected with some very interesting results. The only objection was the occasional shoddiness of construction that this striving after cheapness entailed.



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SECTION 1—PROPOSED IMPROVEMENT OF SOUTH SIDE OF PENNSYLVANIA AVENUE, FROM THE CAPITOL TO THE WHITE HOUSE

The Washington, D. C. Architectural Club Exhibition

THE seventh exhibition of the Washington, D. C., Architectural Club was opened in the Hemicycle of the Corcoran Gallery of Art, with a private view and reception on the evening of May 8.

This exhibition shows a marked advance over previous ones held by this club, not only in the character of the work shown but also in the popular interest. It is perhaps the most noteworthy exhibit of architecture ever shown at the National Capitol.

Like all architectural exhibitions held during the past twelve months, while maintaining a high standard of professional work, the labors of the committees of selection have been in the direction of presenting the subject in a manner intelligible as well as interesting to the layman.

That this is a wise policy and is accomplishing the purpose intended is evidenced by the numbers who visit these exhibitions and the awakening interest in the subject of good architecture.

This exhibition does not confine its presentation solely to the work of Club members.

The visitor to other exhibitions this Spring recognizes many familiar subjects. This presents opportunity for further study, and loses nothing in the repetition.

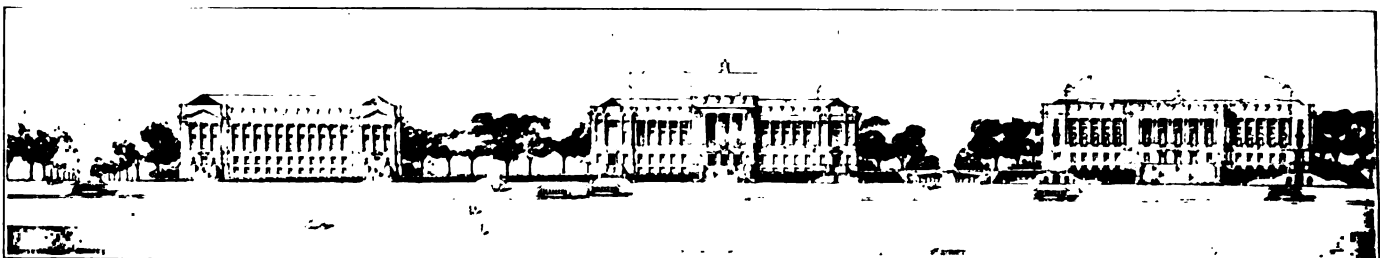
The committee in charge express regret that owing to the limited amount of wall space available they have not been able to include among the invited exhibits much that is valuable and of great interest.

An exhibition like this present one raises the tone and elevates the taste and perceptions of that portion of the general public visiting it, and leads to an appreciation of that most desirable combination—the architecturally good and the practical—both in domestic and other fields of architecture.

As is to be expected in a city of the character of Washington, public and semi-public buildings predominate without, however, in any way curtailing the showing of domestic architecture. Of particular interest to the public was the artistic rendering of a group of public buildings, by Messrs. McAllister & Vanderbilt, of Washington, along the south side of Pennsylvania Avenue, such as is contemplated by the bill introduced in Congress by Senator Hepburn. The long line of tentative structures, reaching from the Capitol on the east to the Treasury on the west includes suggested homes for the Department of State, the Department of Justice, the Post Office Department, a Temple of Justice for the various United States Courts, the Department of Commerce and Labor, the Municipal Building, which is nearing completion, and a building to accommodate several of the larger Commissions. Much interest attaches to this drawing because of the almost universal desire to see Pennsylvania Avenue lined with beautiful buildings that would be a credit to the Nation's Capitol.

A colored perspective of the new National Museum, by Hornblower & Marshall, shows a beautiful building in keeping with the settled policy of the Government to erect only classic structures adapted to meet modern conditions at the Capitol. The two office buildings of Congress are represented by a series of detail drawings and a colored perspective drawing of the interior of the conference room which is particularly pleasing.

Another group of public buildings shown is the work of the office of the Supervising Architect of the Treasury. This includes a number of postoffices, especially notable of which being those for Des Moines, Iowa, Atlanta, Ga., and Toledo, Ohio. In connection with what might be termed the Government's exhibit there is a



SECTION 2—SOUTH SIDE PENNSYLVANIA AVENUE.



SECTION 3—SOUTH SIDE PENNSYLVANIA AVENUE.

group of drawings submitted by well-known architects in competition for the New York City postoffice. The winning design, by McKim, Mead & White, is included in the group.

It is, of course, impossible to describe in detail here all the good features shown; it would entail, in addition to the description, commendation of practically every exhibit. It is sufficient to say that there is not a really bad feature to be seen; and when it is known that practically every imaginable type of architectural structure is shown, this statement may seem to be exaggerated. It is, nevertheless, a sincere statement of opinion, formed after a careful examination of everything. If the Washington Club maintains the standard set in this seventh annual exhibition it is assured a long and successful career.

Much decorative work of a notable character is included and attracted very favorable comment. There are also quite a number of drawings and water colors made by architects and others which deal more or less with architectural themes—an old bell tower painted last winter by Mr. W. E. Donn, Jr., in Cuba; the ruins of a temple, by Miss B. E. Perrie; an interpretation of Notre Dame, Paris, by Mr. Ward Brown; a view of "Twin Oaks," by Mr. James Henry Moser, and a number of other things.

There is good reason to suppose that every one can find enjoyment in this exhibition which contains so much material for careful study and thoughtful consideration.

Old Stained Glass in the Metropolitan Museum of Art, New York

AMONG recent accessions by the Metropolitan Museum of Art in New York City are two German stained glass windows that illustrate the last phase of the older glass painting, that of the sixteenth and seventeenth centuries.

These interesting examples, made presumably at Trier, shortly after 1500 A. D., show the work of the German

school at the close of the mediæval period, and are valuable as forming a connecting link between the Mediæval and Renaissance. As stated in the bulletin of the museum, toward the end of the mediæval period (thirteenth-fifteenth century) the discovery of oil painting effected a radical change in the character of stained glass decoration; the geometric and interlacing patterns of the mosaic work gave way to a naturalistic treatment of human forms in realistic settings, made possible through the medium of glass painting. This art, then at its height, was not only of decorative importance, but served, as had the wall and altar paintings, to illustrate to the public the holy themes of sacred history. With the introduction of Gothic architecture which with its spanning arches abolished the large wall spaces of the Romanesque, windows became more and more a field for decoration, and paintings were reproduced in glass from cartoons designed by contemporary artists. In the glass of this period one finds saints drawn in clear, strong lines with landscapes, and, later, with architectural fragments in the background corresponding to the style of the Renaissance. The delight in deep, rich coloring, with the mystic half-darkness of the Gothic churches, gave way, in the sixteenth century, to lighter and paler colors. This phase of art was reflected in the glass of the period in which color soon became secondary to design. In this connection it is interesting to note that shortly before this time, in the middle of the fifteenth century, when the tendency was toward lighter rooms, certain tints of yellow were discovered and these were soon taken advantage of in the art of glass making. The two windows under consideration show the introduction of these new tints to a slight degree, they slightly precede the period of advanced drawing, far-reaching perspective and clear contours of the later style, and represent admirably the transition period between the deep rich tones of the Gothic and the lighter effects of the Renaissance. The features of the ornamental background are so placed as to convey no idea of depth, being on the same plane as the figures. The drawing is undoubtedly the work of a painter, and a very good one.



SECTION 4—SOUTH SIDE PENNSYLVANIA AVENUE.

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AND
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The New York City Municipal Building Competition (twelve pages); Society of Beaux-Arts Architects (three pages); Washington, D. C., Architectural Club Exhibition (one page).

AMONG the timely topics now receiving attention from writers and speakers generally, there is probably none of more absorbing interest than that for the discussion and study of which the recently adjourned Conference of Governors was held at Washington. The conservation of our national resources as represented by forests, coal mines and deposits of iron ore is a subject about which there seems to be little difference of opinion, the illustrious statesmen whose utterances carry much weight agreeing that there is the greatest need of economy lest the country's natural wealth becomes exhausted. It has been generally conceded, for example, that it will be practically impossible in a few years to obtain any but the lower grades of lumber, and at the present rate without foresting, the entire amount of timber standing will, it is said, be exhausted in less than thirty years. Similarly figuring on the basis of the increased rate of consumption, which it would seem reasonable to expect under present conditions, the prospect of exhausting the known supply of coal and iron does not appear remote.

BUT although obviously there can be no difference of opinion concerning the advisability, even necessity, of preventing such needless wastes as forest fires, the question suggests itself—is it reasonable to expect that present conditions will remain unchanged and that the rate of consumption will continue for an indefinite period to increase as in the past? Undoubtedly the Governors' deliberations represent to a degree the most advanced thought and knowledge of the present day, barring perhaps some more or less undeveloped and as yet imperfect discoveries in the realm of science, but should not generous allowance be made for the development and invention of the future, which, judging from the lessons of

the past, it would seem might eventually render the destruction of our forests or the exhaustion of our mines not only unnecessary but improbable. Already much consideration has been given to the problem of constructing buildings practically or entirely without the use of wood, either as a structural or decorative material, and a number of such buildings have been erected. The results of these efforts, while they do perhaps leave something to be desired, are such as to place the question of wood as a building requisite no longer in doubt, and there should be no more difficulty in discovering an acceptable substitute for the material in the other fields of its present usefulness. Also the almost universal use of iron as a structural material during the past decade and the consequent enormous demand has probably been the cause of the apprehension expressed concerning the exhaustion of our iron supply, but even now cement has made its appearance to relieve and lessen this demand. To what extent relief will be afforded remains a question that cannot be answered definitely at this time, but that concrete or other forms using cement as the basic element will be an important factor in the construction field of the future there seems to be little doubt.

WITHOUT objection, so far as we are aware, the danger of the exhaustion of our coal mines has been dwelt upon, and the spectacle of a nation without fuel has been portrayed with considerable effect. While it is obviously impossible to foretell the knowledge and wisdom of future generations, or of undeveloped forces in nature they may or may not contrive to bring to their aid, we do not feel that it is assuming the rôle of an unreasoning optimist to suggest that human knowledge and attainments have probably not yet reached their final stages of development. Who can say but that by the time our coal supply has been exhausted we may have no further use for coal, or even petroleum, as far as the matter of fuel is concerned?

IS it not within the range of possibility that science may teach us a way to shorten the centuries required to store up the sun's heat in our vast coal deposits to a single season required to replenish our fuel supply? Some measure of success has attended the experiments that have been undertaken looking toward the ultimate utilization of alcohol as a fuel, and compared with an imagination of a generation ago which only by the wildest flights could have conceived even a few of the achievements of science since that time, an imagination which can now look forward to a not distant day when a part of each season's yield of the fields will compose the fuel of commerce, is but dull and weak. We are not inclined to hold that the conservation of the country's resources is of no importance. It is of the greatest importance, and the wise and beneficent work of the Government in the protection of the country's natural wealth is of incalculable value, but the sudden and tremendous agitation of the subject has almost produced the impression that we are confronted by a calamity. Under the circumstances, would it not be well to pause and consider if there is not danger of overdoing the matter? After all there is a wide difference between waste, and a generous use of wealth which may lead to such development and progress that we can look with equanimity upon our vanishing forests and mines, knowing that their loss will be averted long before it can become a fact.

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ENTRANCE FRONT, THE NEW UNION STATION, WASHINGTON, D. C.
Messrs. D. H. Burnham & Co., Architects

The New Union Station, Washington, D. C.

IMPRESSIVE in refreshing memory of an evolution in railroading from the little passenger train which, drawn by two diminutive locomotives of the "Grasshopper" type of the early days of railways, steaming into the modest little station of the Baltimore and Ohio Railroad, there to be greeted by the cheers of the people, including President Jackson, that historic 25th day of August, 1835, was the arrival recently of a huge locomotive drawing a train of modern coaches over the same old road but into the new Union Station at Washington.

Enthusiastic reporters have referred to this building variously as the most beautiful building architecturally in America; the finest, largest, most costly railroad station in the world. A study of the work compels the conclusion that none of these statements, save perhaps the last, are far from the truth.

It is perhaps true that no construction, in recent years, has excited more interest and curiosity than the preparation for and building of this vast Roman palace of white Bethel granite, of which Messrs. D. H. Burnham & Co., of Chicago, are the architects. Its central pavilion, modeled largely after the triumphal arch of Constantine, and all of its outlines preserving the central idea of a colossal city gate, is about thirteen feet longer and seventy-five feet wider than the United States Capitol building. Its construction is a landmark in American civic art; the finest example on record of a conscious and costly cooperation on the part of any railroad companies in a movement to beautify a great city.

The main building or head-house of the terminal will cost approximately \$5,000,000, while \$15,000,000 is about

the cost of the rest of the improvement, including the erection of approaches necessary to give the building a proper setting. This consists of a semi-circular plaza 1,000 feet long and 500 feet wide, decorated with terraces, balustrades and fountains, and with avenues radiating therefrom. Through the center of one of these avenues the visitor, emerging from the main portal of the station, sees the vista of the Capitol, the most imposing and appropriate of all introductions to the National Capital.

Through these radiating streets and avenues, large crowds of people can leave or enter the station without difficulty, while the plaza will provide ample space for assembling troops and the accommodation of spectators for such public ceremonials as take place at the nation's seat of government. The station faces towards the dome of the Capitol, less than half a mile distant, and its architectural treatment is well in keeping with its character as the vestibule of the Capitol.

The depot site, which at the beginning of the improvement consisted of low, undesirable land less than twenty feet above mean tide, has now been transformed into an eminence sixty feet above mean tide level, with gently sloping approaches. To secure the desired elevations approximately 3,500,000 cubic yards of earth has been handled, either in raising or lowering the 165 acres contained in the terminal area.

The quantity of material entering into such a piece of work, and the excavated material moved from one portion of the grounds to another, is difficult to conceive. The filling, for example, within the limits of the terminal

occupation amounts to about 900,000 cubic yards, enough to cover an acre of ground to the depth of more than 500 feet. To fill the plaza and adjacent streets to the new grades required about 1,000,000 cubic yards of earth. When it is considered that an ordinary two-horse wagon has a capacity of less than two yards, some conception of this volume may perhaps be had by figuring how many wagons it would require to move this material. If it was moved on standard gauge commercial cars, such as are used in the transportation of coal, it would require about 80,000 cars to carry it away, and if these cars were coupled together in a single line they would cover a distance of 600 miles.

The foundations of the building start about 45 feet

C. Shand, Chief Engineer, and Mr. Robert Farnham, Assistant Engineer, of the Pennsylvania.

While the construction work was done by the Baltimore & Ohio and Pennsylvania, the terminal will, in conformity with an act of Congress, be used by all railroads entering Washington, including the Philadelphia, Washington & Baltimore, Southern, Chesapeake & Ohio, Atlantic Coast Line, Seaboard Air Line, and the Richmond, Fredericksburg & Potomac.

It has now become the practically settled policy of the Government that the public buildings at Washington shall, at least in exterior appearance, follow the lines of Greek and Roman architecture; in fact, this has been true in the past, with the exception of the Postoffice



LUNCH ROOM, THE NEW UNION STATION, WASHINGTON, D. C.
Messrs. D. H. Burnham & Co., Architects

below the main floor level, and of massive concrete pier and wall construction.

This gigantic work, costing, as previously indicated, in the neighborhood of \$20,000,000, of which Congress appropriated \$3,000,000, has been done by the Washington Terminal Company, owned jointly by the Pennsylvania and Baltimore & Ohio Railroads. The Baltimore & Ohio had charge of building the station proper, express building, various shop buildings, power house, engine houses and the north approach, while the Pennsylvania built the tunnel under Capitol Hill, leading to the station from the south, and the plaza. The work was under the direct supervision of Mr. D. D. Carothers, Chief Engineer B. & O.; Mr. W. F. Strouse, Assistant Engineer, Washington Terminal, and Mr. A.

Department and Pensions buildings. Having this and the fact that the Union Station is the one entrance to the Capital, the architects have naturally and happily drawn on the triumphal arches of Rome for architectural motives.

The head-house is 650 feet long, 220 feet wide, and from 65 to 120 feet in height. Three entrance arches in the central pavilion, 50 feet high and 30 feet wide, overshadow in their dimensions their source of inspiration.

Each of the six massive columns which carry the cornice of the central entrance is surmounted by an allegorical statue by Louis St. Gaudens. These figures typify Mechanical Arts, Agriculture, Imagination, Freedom, Electricity and Fire, and are each 21 feet in height.

The main doorways lead into a vaulted open-air vestibule and thence into the general waiting-room.

The general waiting-room, 130 feet by 220 feet, in itself larger than the average city depot, is covered by a Roman barrel vault 90 feet high, decorated with sunken coffers after the manner of the bath of Diocletian. It is well lighted by a semi-circular window 75 feet in diameter at either end, and by five semi-circular windows 30 feet in diameter on each side.

The floor of this magnificently-proportioned hall is in Vermont marble tiles, and the columns and ashlar walls are of the same granite as the exterior.

At the east end of this hall are grouped the dining-room, lunch-room and women's waiting-room.

The dining-room is very spacious in appearance and

To the east of the three rooms just mentioned, and in the east wing of the building, is the State reception suite and President's room, with a private carriage-way leading to it. This carriage-way passes under the two arches of the east end pavilion. The State suite, which is for the use of the President of the United States, foreign State officials, or other official parties departing from or arriving at the station, is a new departure in American station-building. The main reception-room of this suite contains a total area of 2,100 square feet, and the general layout is such that trains may be reached without coming in contact with the public, thus insuring the much-desired privacy to such officials as will use it.

The interior design of the State suite is very similar to that of the women's waiting-room. The decoration and



GENERAL WAITING-ROOM AND TICKET CORRIDOR, THE NEW UNION STATION, WASHINGTON, D. C.

Messrs. D. H. Burnham & Co., Architects

in fact, the floor area being 6,500 square feet. This dining-room is the finest and most elaborate banquet hall in Washington, and it is estimated that more than a thousand people can be accommodated in it at one time. The treatment of this room is clearly shown in one of the accompanying illustrations. The columns and piers are in rich Seanna and Numidian marble effects. The thoroughly modern lunch-room is located just north of and operated in connection with the dining-room.

The treatment of the women's waiting-room is well shown in the photograph and hardly needs description, the same monumental character as that of the general waiting-room being carried out, the principal difference being in the shape of the ceiling and in the introduction of rich colors. The same liberal dimensions which one sees on every side obtain here.

furnishing of the suite is not yet complete and will not be for some time to come, therefore details are not obtainable. It is understood, however, that these will be rich and simple, and on no more elaborate scale than the other waiting-rooms of the station, privacy being the end chiefly sought.

At the extreme west end of the station is located a carriage driveway (shown at the extreme left side of the photograph of the main front) for the general public, from which entrance access is had directly into the ticket corridor. On opposite sides of this corridor, which is 101 feet long by 51 feet wide, are located the ticket offices, seven in all, and baggage checking-room. Adjacent to these are the packing and smoking-rooms; telephone and telegraph booths will be located within the limits of the general waiting-room.

The baggage-room is located in the basement, access to which will be had at the west side of the building. To avoid conflict between passengers and baggage on train platforms, certain platforms are set aside exclusively for baggage, as shown in the plan of the station.

The passenger concourse or lobby is 130 feet wide by 760 feet long, covered by an arched ceiling in a single span decorated with panels, part of which transmit light. This space far exceeds anything ever built for a similar purpose.

It is divided by the usual fence, allowing a width of 80 feet for the accommodation of outgoing passengers, while the remaining 50 feet between the fence and ends of the tracks will suffice for handling passengers arriving on trains. It is the largest room under a single roof in the world, containing 97,500 square feet, as against 75,200 square feet in the Grand Central Station, New York; and 58,528 feet in the concourse of the Pennsylvania terminal under construction in New York. An idea of the accommodation afforded in this concourse will be had when it is known that practically the standing army of the United States could wait in this station at one time.

Leading off from this concourse are the entrances to the thirty-three passenger tracks. These tracks are in the neighborhood of 1,200 feet in length, and it is estimated that on special occasions, such as handling inauguration crowds, etc., two trains could be run in on each of them, thus providing accommodation for sixty-five trains.

The ornamental ironwork, both interior and exterior, is particularly attractive. Instead of being moulded in sand, as is customary, all of it was moulded in plaster,

with the result that it has a much smoother surface and the detail of the decorative work is much better brought out.

Among the special features in the station is a mortuary chapel for use of funeral parties waiting for trains,

access to which can easily be had from the trains without contact with other passengers.

A branch police station has been provided in the station and has ample detention facilities.



SOUTH SIDE, NEW UNION STATION, WASHINGTON, D. C.

Another departure from the general custom in station-building was made in erecting the train sheds which cover the thirty-three passenger tracks. Instead of a completely closed shed that would catch all smoke, dirt, noise, etc., "Y"-shaped structures, with valley gutters, covering each of the platforms, have been erected and given excellent results.

No express matter will be loaded or discharged at the station proper, but will be handled in a special building built for the purpose. This building is located opposite the power house, is 420 feet wide by 600 feet long, and will take care of the city's entire express business.

The train yard is 760 feet wide, one-half being located on either side of the center line of Delaware avenue, which was taken as the axis of the terminal. On the east side 200 feet are used to accommodate the business handled over the southern connections by way of the tunnels under First street, the plaza and station, entrance to these trains being had at a lower level than the main floor. The remaining 480 feet, which is at the level of the station floor, will have tracks arranged for handling the passengers to and from the north and west.

Restorations

WE appear to have entered upon a period of activity in the restoration and renovation of our old buildings. And not only is this the case with buildings of an ecclesiastical character, but attention has lately been turned to the old castles and keeps which abound throughout the country. Restoration, in the hands of the most competent expert and under the most advantageous circumstances, will always have its critics. The public generally do not see the necessity for it; the antiquarian dislikes it for its own sake; and those who do not range themselves under either of these two categories have the suspense, born of past experience, of anxiously waiting till the completion to award praise or blame. There have been restorers for some hundreds of years, and it is an unquestioned fact that several buildings owe their present ruinous condition to the fact that they were restored. Much good work, however, has been done in this direction during the past two decades at Dunblane, Brechin, Paisley, Culross, and elsewhere, and it is because of this one welcomes efforts now being put forth to reclaim edifices from decay and uselessness

to the purposes for which they were originally intended.

The Cathedral of Dunkeld is a case in point, as through the munificence of a private donor the choir is to be restored as a place of worship, the architects being Messrs. Dunn & Watson, Lincoln's Inn-fields, London. The choir is of special interest to the Scottish people, as in it Christian worship has been continued uninterruptedly since the cathedral was built; indeed, on the site, if not in the actual building, since the coming of St. Columba. No doubt this restoration will evoke criticism, but should the work consist only of removing all traces of the restoration of 1820, conceived and carried out in the spirit of that time, then a good work will be accomplished. The action of the restorers with regard to the old castles is difficult to understand. It is hardly conceivable that they are intended as places of abode, as the ideas of comfort within a house are somewhat different from those prevailing in the sixteenth century. They stand, many of them, in lonely places, sentinels of a long past, the sole survivors of a race which gave rulers to their country, and who, when their Prince called them, left their homes, joined their fortunes with his, and—did not return.—*The Builder* (London).

The San Francisco Cathedral

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Grace Cathedral, at San Francisco, planned to occupy the commanding site presented to the diocese after the great earthquake, is, as appears in the accompanying illustration, a Gothic building in the style of the fourteenth century. It was designed by the distinguished English architect, the late Dr. George F. Bodley, R.A., who completed the plans but a short time before his lamented death.

Indeed, it is said that he was occupied with them almost to the very hour of his sudden passing away, and that his last work was put upon them. His pupil and partner, Mr. Cecil Greenwood Hare, took up the work where he left off, in co-operation with the local architect, Mr. George P. Hobart, of San Francisco, who has had large experience in the rebuilding of that city since the earthquake.

In the course of a letter explaining his plans, the architect gives the dimensions of the church as 275 feet in external length, 251 internally. The width of the nave is 37 feet, the width across nave and aisles 120.4. The transepts are 37 feet wide and 157 feet from the north to the south wall. The height from the floor to the apex of the ceiling is 85 feet. The central tower from the nave floor

to the crossing is 144 feet high, and to the top of the spire 217 feet from the ground line. The western towers from the nave floor to the top of the parapet are 130 feet high, and to the top of their spires 180. The floor plan shows a nave and double aisles with chapels that might be made memorials and dedicated in the honor of various saints. The roof is to be of wooden construction with carved beams and boarded

with ribs and bosses. The architects explain that the construction of this roof might be of iron, and that there might be iron rods or girders inside the beams so as to give extra strength. The clerestory windows will give ample light to the interior. Behind the stone reredos there is an ambulatory affording a connecting way between the vestries. The rood screen is to be of oak and

to be surmounted with a figure of the Crucifixion. The organ is to be in two parts on either side of the chancel with electric connections.

The site is a fine one. The most imposing point of view will be of the west front, with its two spires rising above California street. The lower divisions of these west towers are massive, the treatment being richer toward the top. The spires are covered with lead. There is no west portal, and indeed no entrance from the west front, for the two small doorways there shown lead to the crypt. The main entrances are on the north and south sides, both approached by long flights of steps. The transepts, too, have large entrance doors. The baptistery is at the west end, as appears in the plan. The vestry space is very ample, the bishop's vestry being on the north



INTERIOR OF THE PROPOSED SAN FRANCISCO CATHEDRAL—FROM THE ARCHITECT'S DRAWING.

side, the vestry for the clergy to the south, with the choir room immediately below in the crypt. A spiral stairway connects the choir vestry with the sacristy. There is ample room in the crypt also for chapels, if there should be occasion for them, and it is expected that the crypt will be first built entire and used for services during the early stages of construction.

The architect regarded it as "very desirable that the cathedral should be built in stone ashlar of a good color, red or white." The plans were referred to Mr. Hobart for further correspondence with Mr. Hare, "touching such

Bodley by the committee, in which it says: "I think all experts here as well as public sentiment are of one mind that it will be necessary to make use of steel structure in view of our experience and the



THE PROPOSED CATHEDRAL FOR SAN FRANCISCO, CAL.—FROM THE ARCHITECT'S DRAWING.

revision of the structural plans as may be needed to adapt them to steel frame construction." And in explanation of this they referred to the peculiar earthquake conditions, citing a letter written to Dr.

successful withstanding of earthquake shocks by the larger buildings so constructed." In Dr. Bodley's reply he said: "I quite fall in with the steel frame construction."

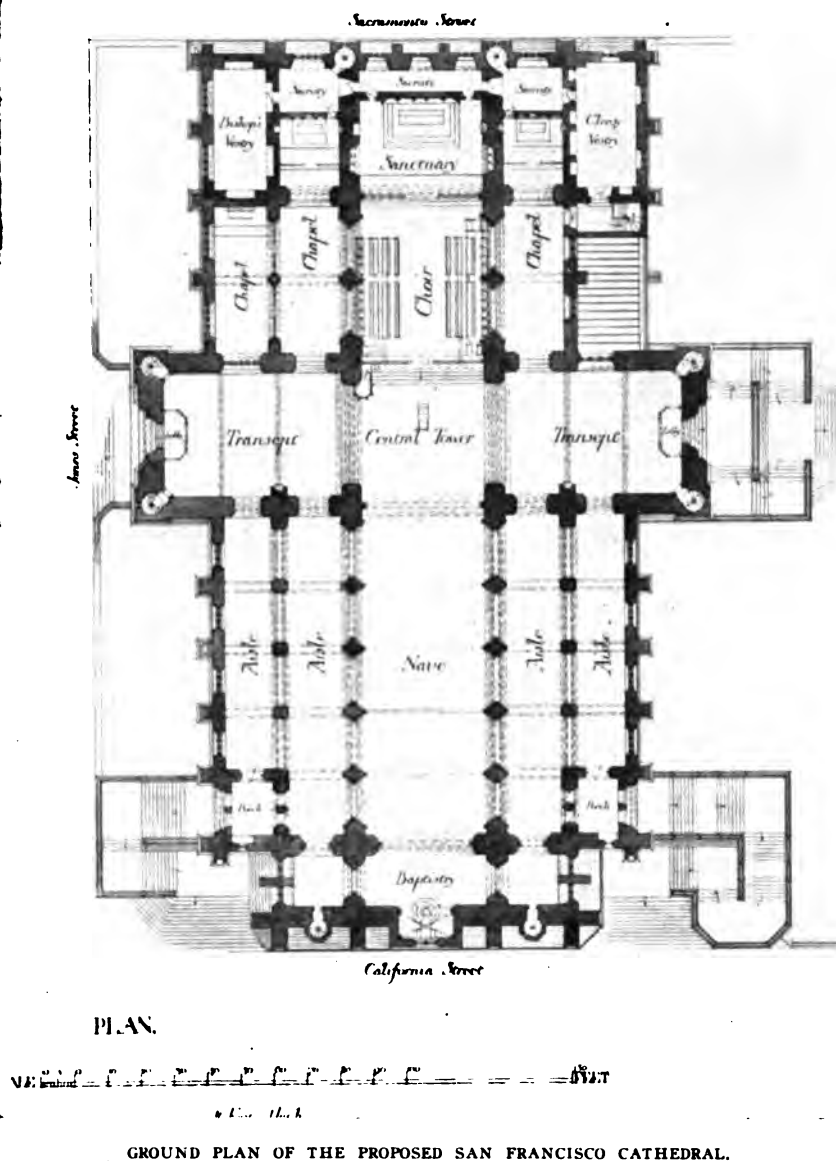
The Excavation of Memphis

THE announcement that Professor Flinders Petrie is beginning the systematic excavation of Memphis, under the auspices of the British School of Archaeology in Egypt, is of more than ordinary interest, and we hope that the funds at disposal will prove as adequate to the task as is the man. During the past few years the brilliant results at Thebes, the central site of the Middle Empire, have eclipsed all other archaeological research in Egypt, except perhaps that of Messrs. Grenfell and Hunt at Oxyrhynchus; but these results might have been foreseen or at least partly expected. With Memphis it is different; that vast capital of the Ancient Empire, which was predominant during the first ten dynasties, and then, after a period of partial decay, revived, with the rest of Egypt, under the great Ramesid builders, had a living history of some four thousand years, lasting till well after the commencement of our era; but it was too fatally near to Cairo, and too subject, without watchfulness, to the inundation of the Nile, to avoid rapid ex-

tingtion after the rise of Alexandria and, subsequently, Cairo, had rendered it of quite secondary commercial importance. The site is some twelve miles south of Cairo,

on the west bank of the Nile, near to Sakhara, and opposite Helouan. The traveler on his way to the former turns aside to see the fallen colossus of Rameses II., one of the very few tangible remains above ground of the glory of Memphis. What may now be found beneath the permanent layers of Nile mud, considering that the temples and palaces must have been ransacked for stone to build Cairo, is purely a matter of conjecture; but it is quite possible that many extremely interesting ground plans may be recovered, apart altogether from statuary and other relics from the great temple of Ptah, said to be founded by Menes of the First Dynasty, and maintained and re-embellished by many subsequent kings.

Under Professor Petrie, also, it is quite probable that comparative archaeology may gain greatly.—*Architect and Contract Reporter*.



PLAN.

GROUND PLAN OF THE PROPOSED SAN FRANCISCO CATHEDRAL.

The Hispanic Society's Library

THE Hispanic Society's Library and Museum, located at Audubon Park, New York City, was opened to the public a few weeks ago. This interesting building was very thoroughly illustrated in THE AMERICAN ARCHITECT of June 30, 1906. As stated in a recent issue of *The Dial*, this society, organized and endowed by Mr. Archer M. Huntington, a lifelong student of Spanish art, literature, and history, has a limited membership of one hundred, and each member must be a specialist in some department of research allied to the general purposes of the society. The library contains nearly 50,000 volumes in various languages and relating chiefly to Spanish his-

tory and literature; while the museum is stocked with curiosities illustrating the arts and crafts of the Spaniards. Here are to be seen gold coins of the Moorish kings and specimens of Hispano-Mauresque lustreware in finer and more abundant display than can be found elsewhere, except in a few European museums. The *Revue Hispanique*, a quarterly valuable to students of Spanish subjects, is published in Paris by the Hispanic Society. The work of this organization not only promotes the cause of culture, but tends to knit closer the ties connecting us with the republics toward the south.

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Reduced Cost of Building.
Scarcity of Wood Affecting Architecture.
Fire Tests in Concrete Buildings.

ILLUSTRATIONS:

The New Union Station, Washington, D. C. (8 pages).

Additional:

The New Union Station, Washington, D. C. (2 plates).
Corner of Dining-room.
The State Suite.

THAT present conditions in New York offer unusual opportunities for advantageous investment in new building enterprises cannot be denied, and the increasing amount of work for which architects are preparing plans gives evidence that these favorable conditions are beginning to attract the attention of investors to the building field. Precisely how much the cost of any given class of buildings has been reduced from the prices which prevailed a year ago is, of course, difficult to determine, but that a material saving over former prices can now be effected we have almost daily demonstration in figures that are being submitted by contractors for current work. Building materials of practically every description are from ten to twenty per cent. below the prices demanded a year ago, and in order to secure enough work to maintain their organizations, contractors are undertaking contracts in some instances without consideration of profit.

THE third element entering into the cost of construction is probably the chief factor in many of the larger cities, and while wage schedules have not been altered in New York, the scarcity of employment enables contractors to pick and choose from among the workmen in the various trades, with the result that the cost of labor has been in effect materially reduced by virtue of greatly increased efficiency on the part of the men. With these facts in mind and considering also the no less interesting fact that rentals have not been reduced, but, on the contrary, show an upward tendency, it would seem that the present activity might reasonably be considered as presaging a movement of considerable importance which may be expected when present conditions are generally and fully comprehended by investors.

THE constantly declining quality and decreasing quantity of lumber in this country, taken in conjunction with the enormous fire losses which have been sustained during recent years, due largely to an over-generous use of wood in construction, renders the consideration of materials proposed as a substitute of first importance. That the problem of suitable materials to take the place of wood must be solved within a few years is apparent and the solution will not only be of universal interest as affecting the needs and comfort of all, but upon it will depend in a measure the trend of future development in country and suburban architecture. Moreover, the interior design and finish of all classes of buildings, city, suburban and country, will be affected radically. In fact, it is probable that in this field the changing condition which threatens to deprive us of the wood that has been used for trim and finish until it has almost become a part of our architecture will be most regretted. Perhaps it is because wood has become an essential part of our building that substitutes are ordinarily submitted in the form of imitation wood, just as concrete blocks have been proposed in imitation of rock-faced masonry, and results have generally been about as depressing. Unless substances or materials susceptible of general application to present forms without resorting to the dubious expedient of imitating other materials are shortly produced, we may expect to witness, with a change of materials, a marked and very general change in many of the accepted forms of to-day.

WHILE the type of fireproof construction represented by buildings whose steel skeletons are protected by hollow terra-cotta tile, probably by reason of its longer use and wider application, has been subjected to numerous and severe fire tests, one of which occurred recently in the Tribune Building in Chicago, and on account of novel features was commented upon at some length in the columns of this journal, actual fire tests of recognized types of reinforced concrete construction of such magnitude and severity as to be regarded in the nature of conclusive demonstrations have been comparatively few. It is of much interest therefore to note the results of a fire which occurred during the latter part of February in a modern reinforced concrete building owned by the Dayton Motor Car Co., at Dayton, Ohio. The fire, which originated on the fourth floor of the building in what was known as the finishing and upholstering department, was fed on large quantities of hair, excelsior, paper, wood, and other materials producing intense heat; and while it burned unchecked until all inflammable materials, including the wood window frames and sash, were consumed, fire was not communicated to other floors of the concrete building to any appreciable extent, although it did spread through unprotected openings to the adjoining non-fireproof building, practically wrecking it, in spite of an automatic sprinkler system, which was lacking in the concrete building. After the fire a portion of the building was tested in what is reported to have been a very thorough manner, and it was found capable of carrying nearly twice the load for which it was designed, with a deflection of but three-sixteenths of an inch in a twenty-two-foot span, from which it would seem that the strength had not been materially affected. And that the surface of the concrete which is reported to have been pitted was not seriously damaged appears from the statement that repairs were made, at a cost of less than five hundred dollars.

THE AMERICAN ARCHITECT

AND

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SATURDAY, JUNE 10, 1908.

No. 1694.



SOUTH FRONT, WILTON HOUSE, WILTSHIRE, ENGLAND.

Inigo Jones, Architect.

Domestic Work of the Renaissance in England

An Address by Henry Tanner, Jr., F.R.I.B.A. Illustrated with Sketches and Photographs by the Author.

PART I

FOR the sake of convenience I shall divide the Renaissance work of England into four general periods, though the first and last of them could very well be much further subdivided. They are: (1) The period from the time of Henry VIII. to Inigo Jones; (2) the time of Inigo Jones and his school; (3) that of Sir Christopher Wren and his school; (4) that of the eighteenth century architects.

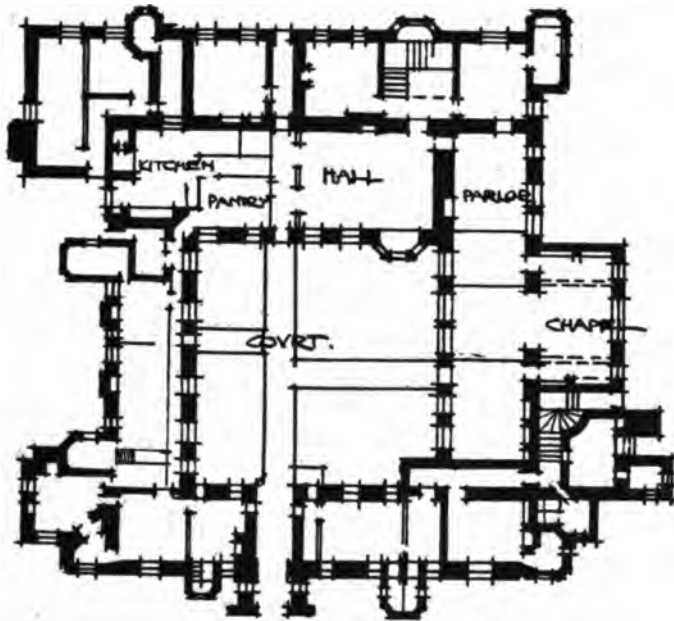
The history of these four periods is that of the rise, greatness, and fall of our Renaissance architecture, the gradual development of the architect from the working itinerant artist, the change in methods and administration from the many and various master workers of the earlier times to those of the one leading spirit responsible throughout, a trained designer, at home at the drawing-board or on the building, as with Jones and Wren, up to the time of the dilettante fashionable students of Palladianism and their contemporaries, who cannot be said to have produced architecture in the true sense of the term, but rather unsympathetic and grandiose studies in

the classic style, quite without proper idea of economy in working, purely for external effect and the glorification of themselves and their clients.

Before discussing the various stages in design which I have enumerated above, it would be well to consider the changes and developments in house-planning since the time of Henry VIII.

The development of the domestic plan from the time when the lord and his dependents lived in the same fortified place for safety's sake, up to the modern type, is very interesting; it was when the need for fortification ceased, that small houses of good class—in distinction from the huts of the serfs—came into existence. These—i.e., the yeomen's houses—were very simple, a living-room with a retiring-room on one side, and in some cases a kitchen on the other. This arrangement on a larger scale applied to the big houses of the period, the hall being in the center, with the entrance and screens at one end to which the kitchens and offices were nearest, and at the other the parlor and family apartments (Fig. 1).

This was the keynote of the house-planning of the period, the central hall and the screens with the main entrance at one end, and dais with a large bay window at the other, being practically universal.



COMPTON WINYATES, WARWICKSHIRE. (1520).

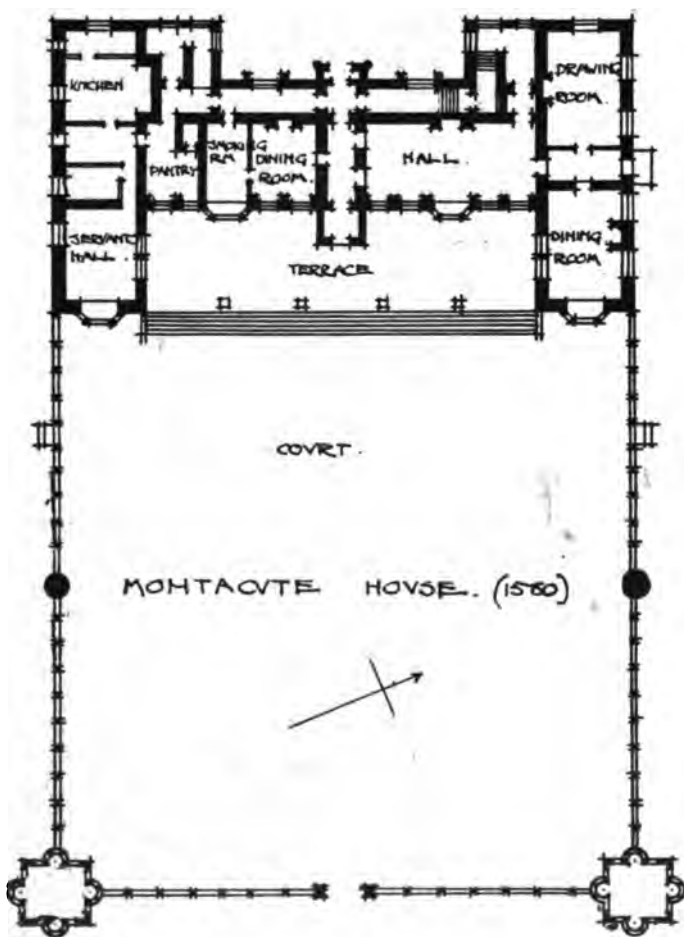


FIG. 1.

The larger house, in which we can still trace the lingering influence of feudal times, was that built round a courtyard and often moated, and with one entrance only over a bridge, but in these the same basis of plan-

ning applied, the hall being on the opposite side to the entrance archway, with the screens and entrance on the same axial line, the chapel, generally found in the larger houses, being on the parlor side of the hall, and the family rooms and service department being proportionately increased, and the remaining part of the building being arranged as lodgings for guests, in the earlier times opening separately from the courtyard, but later on from a corridor running round the inner side of the building.

The next type of plan to be evolved was that formed by leaving out the entrance side of the courtyard and pushing back the side wings as at Montacute, resulting in an H-shaped plan. The people generally now seem to have had more respect for law and order, and had got out of the habit of building with a view to self-defence. The more frequent use of connecting corridors is noticeable at this time, and therefore the less need for a large number of staircases, which must have been an important economy as well as a great convenience.

The next type of plan was that with the backward extension of the wings cut off, which arrangement, together with the projecting central porch, gave the name of the E plan to the series; however, the main principles were the same as those before described.

The great change in house-planning, affecting especially the larger buildings, first came about in Inigo Jones's time, the hall gradually ceasing to be the common living-room, and becoming only an entrance hall, the position the screens formerly occupied, and this is practically the type which has come down to us at the present time, though, of course, there were a good many variations between the time of Jones and our own. Under this régime the ground floor was no longer the principal floor, being used for service, servants' quarters, and storerooms, the first floor becoming the principal one, the entrance door being on this level (Fig. 2) and having generally a good flight of steps leading up to it, the general effect was considerably increased in importance; Raynham Hall, in Norfolk, by Inigo Jones, is one of the first houses of this type having an external flight of steps to the first floors on the main frontages. The grand staircase from this time began to disappear, though it was not readily abandoned, fine examples still being built as at Coleshill and Forde Abbey, the reason of their falling into disuse being that the staircase no longer led to the chief reception-rooms but to the private rooms, the former being on the principal or entrance floors. Jones occasionally had recourse even in country houses, as at Queen's House, Greenwich (Fig. 3), to the small internal courts; which were carried to such an extreme at a later date, though, of course, in a town house such as Linsay House, in Lincoln's Inn-fields, this could not be avoided.

Chevening and Coleshill are, one would venture to say, rather extravagant types of planning, though the effect was imposing; I refer to the very large part of the house taken up by the central hall, staircase, and salon. A very effective plan and a favorite type in later days was that introduced by Jones at Stoke Bruerne Park, which he began, but which was completed after his death, the main central block being connected to side pavilions by quadrant corridors. This was the first house designed on these lines, another similar one, Ashdown House, being built shortly after by his pupil John Webb.

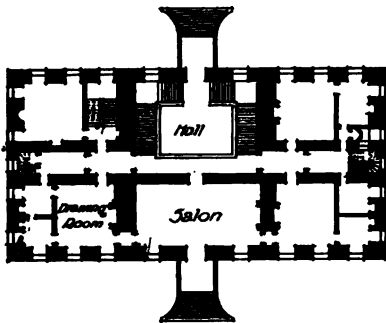
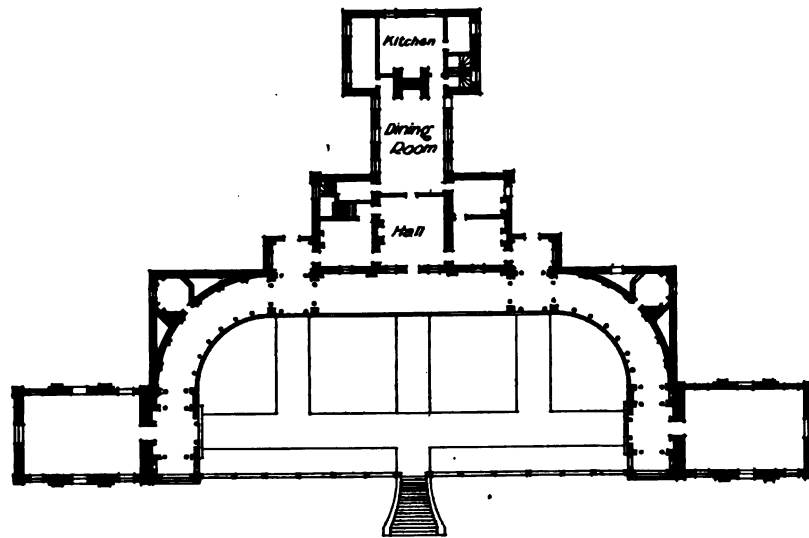
Later, however, under the eighteenth century architects, this type of plan was carried to such an extreme that internal convenience was entirely sacrificed for the sake of outward appearance, the kitchen perhaps being placed in one wing and the dining-room in the main block, the only connection being an open corridor, while any inconvenience in the private living-rooms was not considered, if by sacrificing this any better effect could be obtained for the exterior or the reception-rooms.

The large private houses, in the eighteenth century, had increased enormously in grandeur and importance, as at Blenheim by Vanbrugh (Fig. 4), a building that has

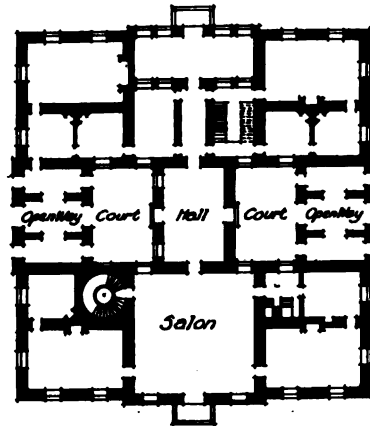
planning and for the people who were to live in the house. Kedleston, in Derbyshire, designed by Paine in 1760, is an interesting plan, being a development of the Stoke Bruerne type, the architect having evolved here a scheme for a main block, with no less than four pavilions and connecting corridors, and the use that can have been made of all the odd and inconveniently planned rooms in this design it would be very puzzling to find.

Though there were many houses of the later period designed in a similar manner to those above mentioned, there were being built throughout England many small houses of quiet design and home-like plan, the handi-

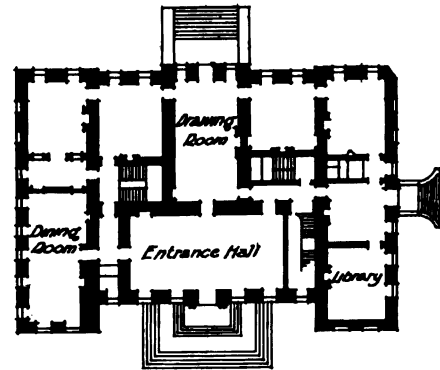
STOKE DAKEN
NORTHAMPTONSHIRE



COLESHILL HOUSE
BERKSHIRE



QUEEN'S HOUSE
GREENWICH



RAYNHAM HALL
NORFOLK

FIG. 2.

had probably as much contradictory criticism as any; the plan is terrific in size, the total frontage being about 850 feet, but the result of this vast expenditure is comparatively small, and as to serviceableness or reasonable use of any sort as a private house, we are inclined to wonder how anyone could dare scheme it; there are corridors unlimited, two grand staircases, and in comparison with its size, bar the hall, not a really fine room in the building.

Castle Howard, another of Vanbrugh's works, is a very similar building as to general disposition and scale, built entirely for effect and with the smallest regard for

work of unknown men, but there seems to have been very few houses built of the middle class; either they were quite small buildings or of the colossal size of palaces, each builder trying to outdo the one before him, only to be surpassed again by the one coming after, and each step separating them further from the class that was content to go on building real houses to live in, and that really carried on through this period our English tradition in domestic work.

The first period of the Renaissance in England, if we may call it so, although it is not so properly speaking, began with the introduction of Renaissance forms and

detail by foreign imported workmen; firstly, Italian in Henry VIII.'s reign, and later on, German; the former period of work was not lasting, merely superficial and grafted on to the Gothic forms, though the English builders later, having assimilated a certain amount of the style from these foreign workmen and pattern books, did produce work of very great charm and flavored, not spotted, with classic form.

You are probably acquainted with the earliest examples of Italian Renaissance ornament in England, for such it mostly was, as that at Hampton Court, Christchurch, the Layer Marney tomb, and Henry VII.'s tomb. Henry VIII. and Wolsey were mainly responsible for the Italian influx, and after their deaths these workmen

in religion a different nationality was encouraged here, and Germans, coming over probably for commercial purposes, brought in by degrees artists and workmen of their own kind, and though far less skilled and artistic than their forerunners from abroad, they certainly more largely influenced the work in this country; they were responsible for many strange and weird devices, architecturally ungrammatical and coarse, and to the trained eye ignorant and vulgar, but there is undoubtedly an attraction in the work they influenced when not carried to too great an extreme. They seem to have imported a considerable amount of architectural literature, consisting mostly of pattern books or samples of ornament, and if one considers carefully their work here it entirely

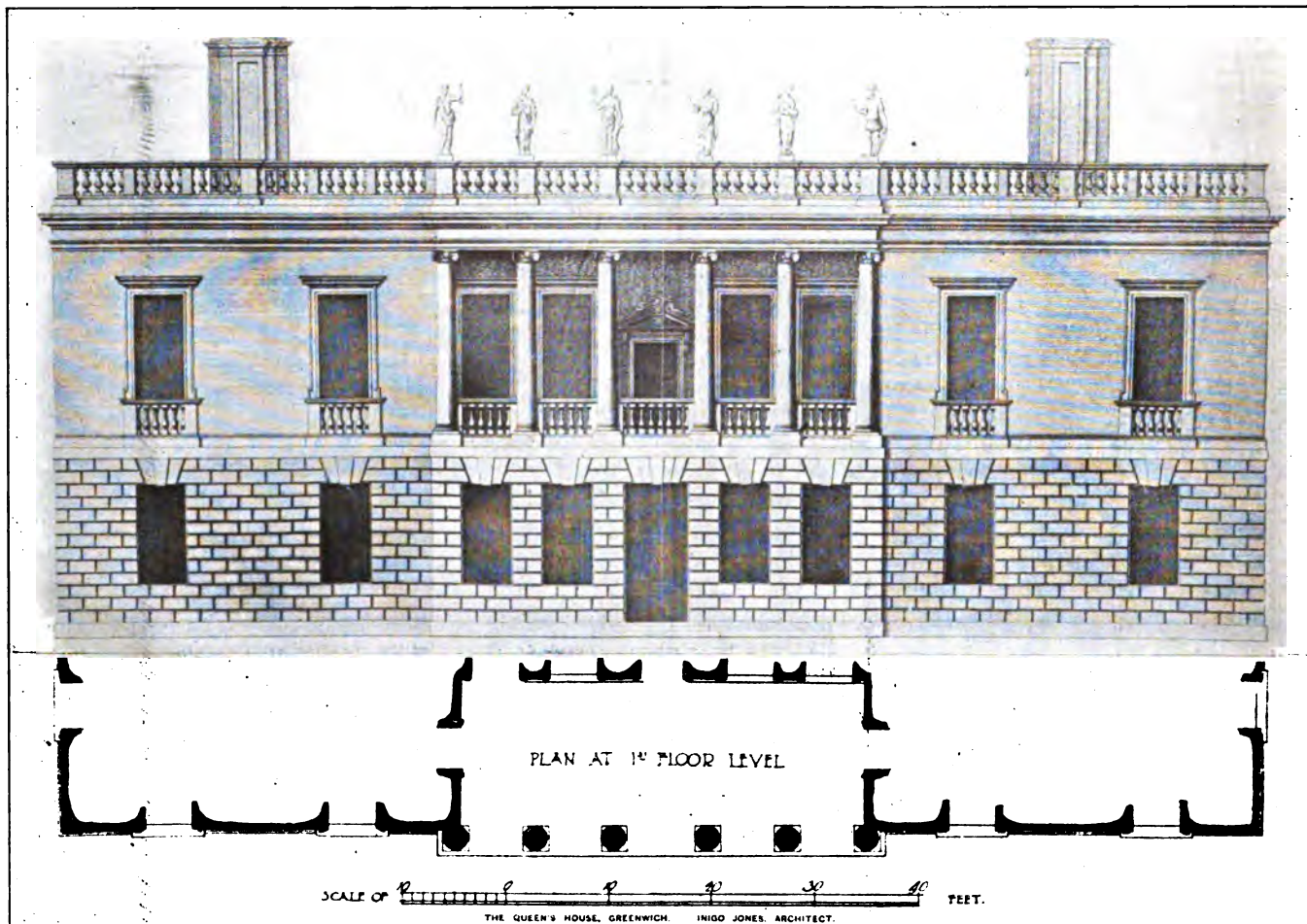


FIG. 3—THE QUEEN'S HOUSE, GREENWICH.
Inigo Jones, Architect

soon disappeared. The most complete piece of work of the period is the screen and stalls in the chapel at King's College, Cambridge. It is a magnificent piece of woodwork, dating from the first quarter of the century, but it is doubtful whether we are entitled to consider it as anything but a complete piece of imported Italian work.

When Henry VIII. died and Edward VI. came to the throne, he found an impoverished estate awaiting him, and instead of indulging largely in building and generally encouraging the arts, he found himself in a position of enforced economy; this naturally reacting on the foreign workmen and artists employed here, they went back to their native country, that is, Italy; and it was not till the time of Elizabeth that others came over, but these were from a different source. With the change

bears out this idea. Their influence is easily discernible in a considerable number of large houses built in Elizabeth's reign, as at Burghley House, near Stamford, and at Hatfield, and also in a large number of small brick buildings all over our east and south coasts.

Their work is easily recognized, chiefly in doorways, fireplaces, woodwork, etc., as it seems to have consisted mostly of tricks of the trade, certain samples of goods variously arranged, hardly ever forming a complete design, and being merely reiteration of the same ornament; among the favorite specimens being coarse figures as supports with the lower half merging into pilasters, heavy strapwork and rusticated wooden columns, and bulging shelves or friezes (Fig. 5). The woodwork in the Charterhouse and Wadham College, Oxford, clearly

comes under this category, having many of the characteristics just enumerated and also curious perspective panels, which one often sees at this period. The porch and some of the gables at Westwood show clearly the traces of their origin; and the list could be extended

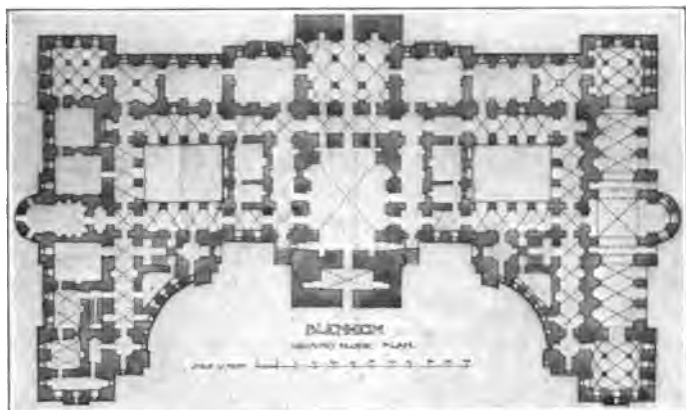


FIG. 4.

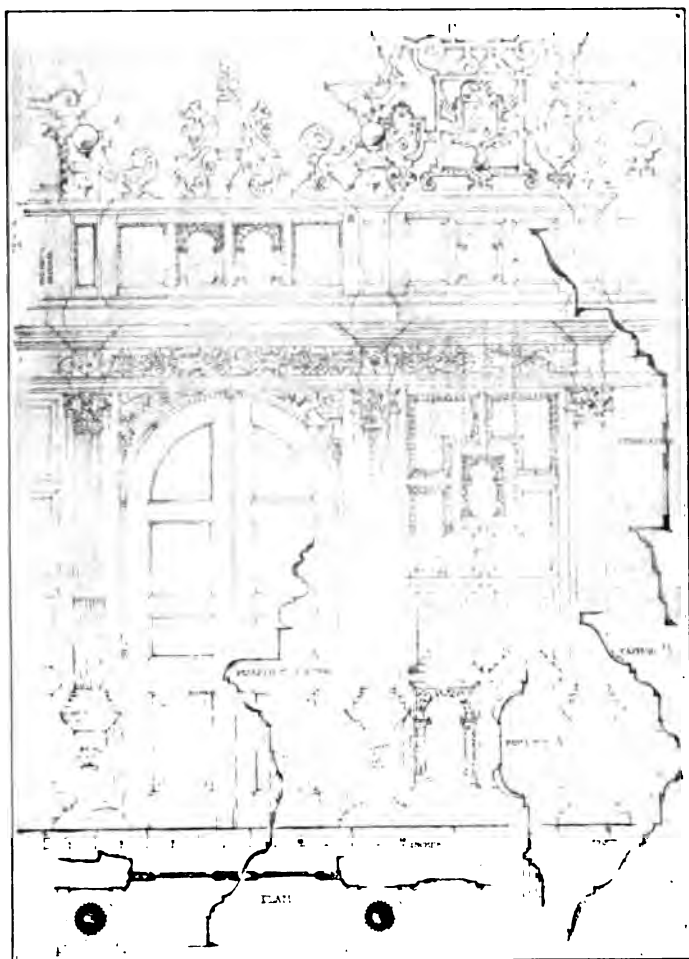


FIG. 5.

to great length as at Cobham, Cranborne, etc., but we must now consider the next period or class.

The second part of Mr. Tanner's address, which refers to the work of the English builders, will appear in our issue of June 24, No. 1696.

"Skill Running to Waste"

TO quote the writer of the following article, which we reprint from the London, England, *Building News and Engineering Journal* of April 17, "This proposal is startling."

That there is much to criticise in the present method of conducting competitions there is no doubt, but we do not believe that any proposition similar to the one this writer advances would meet with approval of the American architect. Nor are we disposed to accede to the statement that "they (the architects' assistants) will take the great man's ideas, of which, like the rest of us, he probably has none too many, and will mechanically repeat them and beat them out thinner and thinner, till by diligent labor they have made them go as far as the size of the building requires."

If this is a true statement of the method pursued by the British architect whose reputation entitles him to an invitation to large competitions, it may in some measure account for the recent success achieved by a young and practically unknown architect in the London County Hall competition.

We know from actual observation that the better American architect of prominence dominates the ideas that are embodied in his plans, that he studies every detail of his subject, and that the material he furnishes to his assistants does not have to be beaten out thin as gold leaf to cover all the surface of his competitive plans.

The article referred to is as follows:

SKILL RUNNING TO WASTE.

"To what purpose is this waste?" is a question that naturally suggests itself as one tries to reckon up the net gain that has accrued to the world from some great competition. Perhaps the competitors in the preliminary trial are not much to be pitied. If they got no further than that, the presumption is that they are more or less in the apprentice stage; and apprentices everywhere have to learn by failure. But what of the schemes which showed enough merit to give them a place in the final contest, with its protracted drudgery and its ultimate disappointment? Some of them, perhaps (we are not referring to any particular competition, either recent or remote), showed little less ability than the victorious one; and many of them, in all likelihood, displayed power that England cannot wisely throw away. Yet what reward have these authors received, and how much richer is the nation for all the thought and invention which the ten or twenty selected competitors have freely laid at its feet? The melancholy answer is, Nothing at all. We do not raise the question whether the chosen design is really the best; whether it is so transcendently superior to each of the unchosen ones that its author deserves something like a fortune, while their authors get their deserts by being pushed one more stage down the slope that leads to ruin. Sometimes it is so, perhaps, and sometimes not, though we wonder in how many cases a different assessor or a different body of assessors would have made a different choice; and we wonder, too, how many of the schemes submitted in the second contest were so hopelessly bad that their makers proved unworthy to have any part or lot in the matter. For the point we are now trying to raise is this: whether the country really acts wisely when it rejects nineteen-twentieths of the architectural skill which is offered to it, and gives all the

praise, and all the pudding, too, to the remaining twentieth part.

But "How can it do otherwise?" will be the natural reply. "How can it take a bit of one design and a bit of another, or, if you like, of twenty others, and mix them all up into a composite building, which shall be everybody's, and yet nobody's in particular?" That, however, is not the suggestion. That is an idea which has repeatedly been tried, and which, naturally, has failed. The possibility, if there is one, lies further back. The preliminary competition, say, has brought to light a number of capable architects who have given their minds to the subject, and with some success. The building we are assuming is a large one—too large to be properly thought out in every part by any individual. Much of it will inevitably have to be designed less by the nominal architect than by his servants—by his clerks, assistants, "ghosts," or whatever you like to call them. They will take the great man's ideas, of which, like the rest of us, he probably has none too many, and will mechanically repeat them or beat them out thinner and thinner till, by diligent labor, they have made them go as far as the size of the building requires. Then, as people pass it, they will say, "This is a good general composition. What a pity all the details are not equally good! We know that the architect can do better things than this; but so vast a place is more than one man can manage. Life is too short, and work has to be done nowadays at too fast a pace."

That is meant to be a fair comment, though it would be invidious to name any of the great buildings to which it applies. And for fear of a misunderstanding, we must point out again that it is only of great buildings that we are now speaking—great in size if not great in architectural merit. Few of the class are conspicuous successes. Some of them could hardly be less noteworthy—either inside or outside—than they are; and twenty of the largest buildings in London might be destroyed without as much real loss to art as would result from the burning down of some little chapel in an Italian town. No doubt these very large buildings serve their mechanical purpose. But they might do that equally well if each of them displayed the best thoughts of five or six architects, and not of one only; and our suggestion is that a great competition should generally end in the appointment of several architects.

No doubt the proposal is startling. "We know already," our professional readers may say, "what happens where there are too many cooks. We have ourselves been sat upon by 'brother architects' too often; unsuccessful competitors, perhaps, who were raised to the rank of committeemen to recompense them for their wasted labors; and no good comes of it, nor is likely to come." But this is not at all our idea. A system in which every invention had to get itself approved by several rival inventors is one in which nothing worth making would ever be made. Suppose, however, that a general scheme for the building was first decided on, and that one section of that scheme was then turned over to one designer, and other sections to others, giving each of them, within wide limits, his own way in his own part. Might it not be possible in some such mode as that, to bring back the interest and individuality which make ancient buildings a joy forever, and to get rid of the staleness, triteness, and repetition which pertain to

"clerks' work," and the beating of a few ideas out thin enough to cover an extravagantly large surface?

If such a system were going to be acted on, the first problem would be to decide on the general plan. Now, there is a well-known case in point—a no less recent one than that of the Birmingham Law Courts—in which the promoters did provide the competitors with a ready-made plan, leaving them free to adopt it or to alter it as they pleased and we believe we are correct in saying that the chosen architects, though they made one radical change in its arrangement, may yet be said, in the main, to have adopted it. Now, if this could be done once, something of a similar sort may be done again; and, if not, the preliminary stages of the competition might wisely, perhaps, be confined to sketches of planning and general grouping. But in that case, would it not be necessary to make very severe rules about style? Must not every competitor be compelled in that case to design—not in the architectural manner he liked best and knew most about, and commonly worked in, but in that of some period or some place which the promoters would have to impose on all the competitors alike? Really, we do not see why. Have we not had almost enough uniformity? Are we not all sufficiently tired of the "ditto style," in which one hardly needs to look at more than one-half of a building because you know beforehand that the other half will repeat it? And supposing several different architects were finally entrusted with different blocks of a great building, and supposing they *did* each work his block out in a style more or less unlike the rest? This would be only to produce, contemporaneously, the same sort of variety and interest which lapse of time, and the coming of builder after builder in long succession, give to so many of the most beautiful ancient buildings in the world. People have tried, from age to age, to carry out uniformity of style in their architecture. But Time will have none of it; and, after all, Time manages men's work better than they could manage it themselves.

Lastly, the appointment of several architects in such great competitions would diffuse over a wider area those gleams of sunshine which are now concentrated in a very few spots as if by a burning-glass. Most of the profession, however deserving, live and die in the cold shade, while a few individuals, "dark with excess of light," get more to do than any man can accomplish at his best. Is it not worth considering whether both architecture and architects might not gain if a great building once more contained, as such buildings once did, the best of many men's ideas, instead of the thoughts of only one.

A Recent Decision

The claim of Architect John J. Howley, Scranton, Pa., of \$300 for drawing a design for the mausoleum of Andrew Campbell, was refused in an opinion handed down by Judge Sando in orphans' court.

Mr. Howley claimed a commission of two and one-half per cent. on \$12,000. Mr. Campbell provided in his will that this amount should be expended on the vault and monument to be erected for his remains and those of his wife.

Mr. Howley's claim for compensation was rejected because he had no written authorization from Mr. Campbell to do the work and could not show absolutely by parol testimony that he had such authorization.

Points of Law for Architects

PARTIES competent to contract may make such terms as they see fit, and will be held to the performance according to such terms. So it has generally been held that provisions in building contracts that the work shall be done to the satisfaction of the architect, or that payment shall be made only upon the presentation of the architect's certificate, are binding and must be complied with before the contractor may recover the compensation to which he is entitled upon the performance of his contract. In adjusting the claims of the parties under building contracts, which provide for payment upon the presentation of the architect's certificate, the courts look not merely at the naked words of the contract, but at their real meaning, reading them in the light of experience, justice and common sense.

The certificate of the architect may be, and doubtless is in most cases, a very proper means of ascertaining whether the contract has been performed, but to say that it is the only means of determining that fact, does not accord with common experience, and is not supported by the authority of adjudicated cases; hence, there are many cases where it is held that the certificate, stipulated for in the contract, may be dispensed with, and the fact that the certificate has not been obtained is not always a defence to the contractor's action for compensation.

If the architect, whose certificate the contractor is required to present, fails or refuses to act in the matter, the certificate then ceases to be essential to the contractor's right to recover. In *McDonald vs. Patterson & Co.*, 57 N. E. Rep., 1027, the parties had entered into a contract for the erection of a hotel and bank building in Danville, Ill. Final payment was to be made upon the certificate of the architects within ten days after completion of the work. The owners refused to pay the contractor on the ground that he had not presented the architects' certificate that the work had been done to their satisfaction, as required by the contract. The contractor showed that the architects, who had their offices in Chi-

cago, were employed by the owner and refused to go to Danville for the purpose of inspecting the work, unless so directed by the owner, and as the owner would not give such directions, the architects did not see the building and could not issue their certificate. The evidence was held to justify an inference that there was collusion between the owner and his architects which obviated the necessity of obtaining a certificate.

An architect in employ of a city was appointed to act as arbitrator under a contract for the construction of waterworks, to which the city and a contractor were parties. The architect was empowered to direct the contractor to do extra work with the approval of the city council and to decide all questions which should arise relative to the installation of the waterworks by the contractor. After the works had been substantially completed to the satisfaction of the architect, and had been in the use of the city for three months, a break and leak occurred in the settling basins which rendered them unfit for use. Thereupon, by direction of a committee of the city council, the architect notified the contractor to repair the basins and to make them water tight, or that the city would do so at his expense. The contractor replied that he was not responsible for the break and refused to remedy it. In an action by the city against the contractor it was shown that the architect had given his final certificate as to the proper completion of the work and had determined that the 15 per cent. which was to be retained until the work was finished, was due and payable to the contractor. And it was held, accordingly, that the authority of the architect to act as arbitrator had ceased and that his mere direction that the contractor repair the break did not make such work a legal obligation upon the contractor. The power of an arbitrator is gone after his final decision, and he may not subsequently modify, revoke or annul it, or make a new award upon the same issues. (*City of St. Charles vs. Stookey.*)—*Pittsburg, Pa., Press.*

The Kaiser as an Architect

Emperor William is the busiest man in Germany. Temperamentally, I take it, President Roosevelt resembles him much, but the Kaiser is the more versatile of the two. If there is anything going on in the empire that the Kaiser does not find an opportunity to take a hack at, it has escaped the notice of those who watch him closely. He revises all public findings, supervises all architecture, lectures everybody, and is a general all-round little Father in every sense of the term.

When they want to illustrate his ceaseless activity, as well as resistless power, they tell the story of the star above the cross on the spire of the Emperor William Memorial Church. This is the tale as it was told to me: Of course, the Kaiser insisted on revising the plans of the church. That is one of his fondest prerogatives—revising everything, and especially plans. The architect brought the plans to him, and the Kaiser scratched out what he didn't like and made such additions as he fan-

cied before he gave them the imperial O. K. The church was built. There was to be a big gilt cross on the spire, and it appeared in its proper place. But, much to the general astonishment when the cross was put up, a large many pointed gold star was raised above it on a heavy rod. The Berliners could not understand the star. They inquired. The architect said the Kaiser had added the star to the plans.

The plans were examined. Then it was found in revising them, the Kaiser had let fall a drop of ink from his pen which hit the paper just above the cross. The architect studied a long time over this blot of ink. His Teutonic mind grappled with the problem for weeks. There was no appeal. There could be no inquiries. He finally decided the blot of ink signified a star above the cross, and he put the star there, making it correspond as near as possible with the outlines of the blot. The star is still there.—Samuel G. Blythe, in the June *Everybody's*.

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Growing Artistic Appreciation by the Masses in America.

Complex Services Demanded of the Modern Architect.

ILLUSTRATIONS:

House of Harlston Deacon, Esq., Tuxedo Park, N. Y.
(5 plates).

House of John R. McLean, Esq., Washington, D. C.
(4 plates).

Additional:

Court and Stairway, Palazzo Gondi, Florence, Italy.
Stairway, Palazzo Menelli, Venice, Italy.

A GRATIFYING improvement in taste and increase in appreciation of art on the part of the public and public authorities throughout the country is one of the most hopeful and significant indications of the year. Much has been written concerning the education of the masses, and it has been generally conceded that without the encouragement and endorsement of an enlightened and appreciative public, little could be accomplished toward the advancement of any form of art. That this encouragement is no longer withheld in progressive communities there is abundant proof. Already our museums and galleries have shown a disposition to secure representative American works without waiting for the European verdict of approval, and this can only be in response to public demand.

U NDOUBTEDLY keen artistic perception and ability are qualities of first importance in the architect, and without them he would have much difficulty in successfully defending the title, but the requirements of present-day practice seem to demand, with almost equal insistence, that the architect possess in addition to his knowledge of design, a thorough knowledge of general mechanics, of materials and construction, and, besides all these, business ability of a high order. Owners and investors are, unfortunately, not always competent to pass upon matters of design and, as might readily be

supposed, under such circumstances rarely appreciate to any considerable extent the real value of an architecturally commendable building, but few there are indeed who do not demand the highest mechanical efficiency and the greatest possible return on the investment.

HOW frequent is the owner's plaint that his architects, while undoubted artists and high-minded gentlemen, were hardly competent business men, and he felt that his building had cost more than was necessary, perhaps due to their being deficient in this very necessary qualification and their consequent inability to cope successfully with a shrewd builder. Instances are rare in which buildings have been erected without substitutions, additions, deductions, and modifications of various descriptions, so that even in the case of fixed-sum contracts the business of superintendence, examining proposals and negotiation, aside from making estimates of amounts due on contract from time to time, is large, and if the contract be one based on cost and a percentage or stipulated amount of builder's profit, this work is ordinarily increased, if an owner's interests are adequately safeguarded.

OF course it is doubtful if there could be found one possessing to a high degree all these multifarious qualities. The true designer, in whom the artistic qualities and temperament must predominate, is irked by the detail and minutiae of directing an office. The preparation of complete, minute and accurate specifications, the giving of careful consideration to the mechanical equipment, the keeping of a comprehensive system of accounts in connection with each particular piece of work in hand are all veritable drudgery, and more than likely to be shirked by the artist, while the negotiating and bargaining with the various contractors, invariably necessary in connection with the superintendence and direction of a successful building enterprise, is to him almost unbearable.

THE logical solution of the difficulty, it would seem, might possibly be contained in some of the modern architectural offices which are in effect business organizations of many departments, one department, probably the chief one, being devoted to architectural design. The legend "John Smith, Architect," no longer arouses a mental picture of a McComb or a Bulfinch who, with two or three assistants, students, or apprentices, prepared all designs and drawings and personally directed and managed every detail of construction of one building at a time. Our buildings have increased in complexity, and possibly our architects' ambition in securing many simultaneous commissions has contributed, till the modern "John Smith, Architect," may be the appellation by which an organization comprising engineers, superintendents, business managers, accountants, specification writers, architectural draughtsmen, designers, clerks and the rest is known. Obviously the closest sympathy, the greatest appreciation and the most perfect cooperation must prevail between departments if the best results are to be obtained, and some master mind, that of "John Smith, Architect," or his successor, must direct, but that these are not impossible conditions we have what might almost be considered conclusive evidence.

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No. 1695.



CONDITION OF CAPITOL AT WASHINGTON, D. C., AFTER BEING BURNED BY THE BRITISH TROOPS IN 1814.

Charles Bulfinch, Architect

By JOHN MEAD HOWELLS

Illustrated by photographs in the collections of Glenn Brown, Esq., and the Author.

CHARLES BULFINCH was one of a very small group of architects who practised their art in America at the end of the Eighteenth and the beginning of the nineteenth centuries, and whose work has since been popularly called "Colonial." He was also one of the still smaller group of three, Thornton, Latrobe and Bulfinch, who created the original Capitol at Washington. Bulfinch was an important and prolific architect, and designed a long list of public and semi-public buildings and groups. His education, his sources of inspiration, and the work he accomplished; his times and conditions, and his associates in his work; his own delicate and upright character and the engaging circle of family and friends among whom he lived, are all matters of peculiar interest to Americans. He was one of the few architects on whom one can definitely lay one's finger as a creator of our early American style, and he had the enviable fortune, amounting almost to a virtue, of living at a moment of much importance to all of us Americans, and of great charm to many.

He was born in 1763, but if, with that half-conscious impulse in us all, we turn first to his ancestors for some antenatal reason for his characteristic qualities, we do not find any specific artistic abilities. His great grandfather, Adino Bulfinch, a merchant, came to Boston about the middle of the sixteen hundreds, and if we begin with this Adino, it is not so much for his relevancy to Bulfinch

the architect, as for the pleasure of quoting a few lines from certain letters written by Adino to his son Thomas, who was studying medicine in France. In these letters which I find, with so much of my other information, in the delightful "Life of Bulfinch," by his granddaughter, Miss Ellen Bulfinch, Adino's affection for his son shows strongly through the now antiquated diction of his advice and instructions. In those days such letters, pathetic in their infrequency to our times of the quasi-diurnal steamships, were necessarily full of commissions for things not obtainable in the Colonies. "I believe," Adino writes to his son at one time, "it would do Extraordinary Well to bring A Good Sober Young Man wth You, One y^t has Served his Time, wth An Apothecary." And, following in a postscript, among a multitude of directions, the young man is desired to buy for one of his sisters, "28 y^d of Yellow flowered Pee Green, or any other Modest Colour. You must go to the Weavers, for You may buy it Cheaper There. She Likewise Now has sent 4 oz. of Silver & 3^s 6^d in Odd Money Sterling To buy 5 y^d of Three Quarter of a Y^d Wide Lutestring for a Scarfe, & to get The Veloure to Suit it."

This young man's son was another Thomas and another doctor, who also made his studies abroad, and was the father of Charles the architect. I have been shown a copy of a little school book of the son, "Dialogorum

Sacrorum"—worn, bescribbled and marked inside "Charles Bulfinch, his Book, Bought of Mr. Bowes, July 16th, 1773." He was only ten years old, but inside the cover, prophetically enough, are drawings in pen and ink of a tiny column and two extra capitals (in case, apparently, of emergency) all of the Corinthian order.

The Revolution came, and in later autobiographical notes Bulfinch himself writes: "My earliest recollections are of the altercations and political disputes occasioned by the attempts of the mother country to raise a revenue in the colonies, of the resistance to the Stamp Act, of the destruction of the tea in Boston harbour.....

of the fight at Lexington & the battle of Bunker hill, which I saw the progress of from the roof of our dwelling house. After the return of the inhabitants to Boston, the town schools being re-organized, I was readmitted to the Latin school, & fitted for College (Harvard) which I entered in 1778 and graduated in 1781. The class consisted of only 27 My disposition would have led me to the study of physic, but my father was averse to my engaging in the practice of what he considered a laborious profession, & I was placed in the counting room of Joseph Barrell, Esq., but unfortunately the unsettled state of the times prevented Mr. Barrell from engaging in any active business, so that I was at leisure to cultivate a taste for Architecture, which was encouraged by attending to Mr. Barrell's improvement of his estate and on our dwelling house & the houses of some friends, all of which had become exceedingly delapidated during the war. Coming of age about this time, an uncle died in England and a portion of his property, about £200 Stl^{rs}, came to my parents, who devoted it to my use for a visit to Europe. I accordingly embarked in June 1785, and returned January 1787. The time of my visit to Europe was passed, partly in London; in a visit to France & through that country to Italy. In Paris I tarried some time to view its buildings & other objects of curiosity, to which I was introduced by letters from the Marquis La Fayette & Mr. Jefferson, then minister there."

Although Bulfinch merely took this trip as a young gentleman of family, without, apparently, any thought of a professional object, it is plain that he appreciated the monuments of Europe. But the point of interest to us, and to the after development of his art in this country, is that such architects as the Adam Brothers and Sir William Chambers were then working in England, and had only lately developed certain schemes, such as the treatment of straight or segmental city blocks as single compositions, which were much before the public, and which Bulfinch evidently admired, as his immediate work in designing Franklin Place and Colonnade Row

in Boston showed. I have found plates in such works as those of Chambers, Schoy, and the Adam Brothers, with architectural *motifs* so characteristic and so almost identical with those used by Bulfinch, as to show that the best documents of the moment were also his.

It was during his stay in London that the portrait of him at twenty-three, which we reproduce, was painted. "You will find it very rough," he writes to his mother, "but that is the modish style of painting, introduced by Sir Joshua Reynolds." Most in character seem the clever eyes and parted lips. Apparently he was carrying about with him an idea which triumphed over any travel-madness which may have threatened him when he crossed from Antibes to Genoa "in an open feluca," for he writes to an intimate friend of his own age that he has got Boston news from the captain of a ship at L'Orient,



PORTRAIT OF CHARLES BULFINCH, BY A PUPIL OF SIR JOSHUA REYNOLDS.

and then: "If we may judge by the numbers of marriages, you are in a flourishing situation. I am only afraid you will marry off all the fine girls and that there will not be one left for me. I don't know whether you had not better engage me the refusal of half a dozen, for if you go on so rapidly as you have begun, I shall be compelled to take up with some little French hussy But it seems this was not so much of a generalization after all, for the postscript to his letter adds: "I wish you a happy Commencement. You must dance either with Miss Williams or Miss A-t-p. If with the latter squeeze her hand for me. If with the

former, do it for yourself. Adieu." In spite of the mystery of the elided name, we know who she was now, for apparently he married her as quickly as he could bring it about on getting home, and during his long professional career he turned to her constantly as his greatest help and counsel. She was Hannah Apthorp, the "eldest of the orphan grandchildren of the royalist, Stephen Greenleaf, the last high sheriff of the county of Suffolk under the British government."

Bulfinch now settled in his native town, a young man of family and fortune, and as he himself writes, "persuading no business, but giving gratuitous advice in Architecture," the profession which was destined soon to become his means of support, for his loss of fortune followed quickly after the failure of the building project of Franklin Place, through the depression of values from the expected rupture with England in the war of 1812.

Washington), the beautiful Boston State House. The final account of the building committee was approved in 1800, when the first appropriation of eight thousand pounds was authorized. From this date to his removal to Washington in 1818 Bulfinch finished nearly the whole list of his works in New England, including the Massachusetts General Hospital, the Church of the Holy Cross, which was the first Catholic church in America, to the fund of which both Catholics and Protestants contributed, and the beautiful church still standing in Hanover Street. The "Centinel" printed an appreciation of this church at its opening in 1804, part of which I quote from Mr. Willard: "On Wednesday afternoon the Rev. Dr. Eliot's new and elegant meeting-house at the north end of this town was consecrated to the service of God The building reflects honor upon the professional talents of the architect, Charles Bulfinch, Esq. The Ex-



VIEW OF CAPITOL FROM WHITE HOUSE, IN 1840.

The buildings of Franklin Place, ruinous as they were to him financially, were a prosperous step architecturally for this country in bringing, with its bold sweep, a whole city block into one composition. This was not the first work he executed. Almost immediately on his return from Europe, the beacon pole, which for generations had surmounted the top of Beacon Hill, was blown down, and was replaced, at the suggestion and after the design of Bulfinch, with a doric column 60 feet high, to "Commemorate the train of events which led to the Revolution, and finally secured Liberty and Independence to the United States." It seems that Bulfinch himself finally subscribed much of the cost of this work.

Not long after came the commission for his greatest work (unless we except his share in the Capitol at

terior is in a bold and commanding style. The inside is a perfect square of 72 feet; two ranges of Dorick columns under the galleries, and Corinthian over them, support the ceiling, which rises in an arch of moderate elevation on the centre.

"The modest Dorick forms the solid base,
The gay Corinthian holds the higher place;
Thus all below is strength and all above is grace."

After this came other "churches" and "meeting houses" as they are separately headed in the list of his Public Buildings found among his papers. The simple modesty and scrupulous probity which stood before every other thought or motive in his long and not always happy professional life, seem somehow to breathe most touchingly through this plain little document, necessarily

written near the end of his life. In it he will only note those buildings "erected after the Design and under the Direction" of himself; and many, for which he should have had credit, must have been unnoted; none of the



CHURCH AT LANCASTER, MASS.

beautiful private houses are mentioned. There is no sort of comment or explanation; only the locality after each, and the word "stone," "brick" or "wood," as the case may be. We can only realize from the excellence of the works which still remain standing, how much we have lost in those that are gone. It is wonderful that he was able to do so much with his almost austere simplicity of design, rich only in proportion and line, and limited at many points by the poverty of his materials and the close economy necessary in his calculations of cost.

In the complete making over of Faneuil Hall he showed that delicate loyalty in carrying out the spirit of the old design and that disinclination to substitute a new creation at the expense of the old, which must always seem the attribute of a true artist. We also find on his list, prisons, banks, insurance-offices, schools, and "entire streets," making forty-two buildings in this list alone, including the Boston Theater and University Hall at Cambridge; then court houses at Boston, Worcester, Newburyport and Cambridge.

The church at Lancaster, Mass., here shown, is probably the best of his churches now standing. We have from Mr. Willard an amusing account of the Town-meeting held for consideration of these plans, at which there took place "A very spirited discussion, covering several adjournments, as to which way the church should face. It was suggested by one speaker that it should be built on something in the nature of a turn-table, as the only way to harmonize all parties."

Bulfinch was chosen Selectman of Boston at the age of twenty-seven, and later Chairman of that Board, and in his life we find an account of many laws enacted and improvements made due to his exertions. His position was similar to that of the mayor; he represented the town on occasions of state, and received the distin-

guished guests. One of the by-laws confirmed under his administration is amusing at this moment, as being directed against the germ of the trust-idea, for it orders that no person shall contract or bargain for any provisions while bringing to the market, "and to the intent to discourage the injurious practice of forestalling the market" a penalty was affixed, with the words: "And all persons having the least regard to justice and to the poor inhabitants of this town, are requested to give information against every such offender that he may be brought to condign punishment." "Lighted segars" were forbidden in the streets, fast driving was fined, and we read that "no driver of any hackney carriage shall drive said hackney carriage into or from town on the Lord's day."

The second professional period of Bulfinch's life began when he was called to Washington by President Monroe. Oddly enough he was at Washington just before in the beginning of 1817, but without any idea at that time of this invitation. He was sent by certain Boston citizens to study the Hospitals of New York, Philadelphia and Baltimore, preparatory to making plans for the Massachusetts General and the McLean Hospitals. From Washington he writes: "I have visited the President and Mrs. Monroe I have also attended Mrs. Madison's drawingroom two evenings since, where I found a great display of beauty and a collection of distinguished persons. . . ." In a letter from John Quincy Adams dated December, 1817, his appointment by the President as Architect of the Capitol with the appertaining salary of \$2,500 was announced. He had been advised to apply for this appointment, but he writes: "I declined making any application that might lead to Mr. Latrobe's removal," and he adds, "I think his talents entitle him to the place, and that he is the most proper person to rebuild what he had once so well



SEARES HOUSE, MT. VERNON STREET, BOSTON.

effected." For the Capitol, although always following the general lines of Dr. Thornton's design, as accepted by President Washington, had been carried forward by Latrobe, until burned by the British and left in the ruin

and desolation shown in our plate. Bulfinch took charge of it in this condition, and most interesting is his account of his official examination of the building. His own room, where his office hours were to be from 10 to 3, he found "covered with plain stucco which



HALL: DR. NICHOLS' HOUSE, MT. VERNON STREET, BOSTON.

bears the marks of smoke and the ravages of fire."

At his first examination of Latrobe's drawings he wrote: "My courage almost failed me—they are beautifully executed and the design is in the boldest style." Bulfinch himself was a careful but not a strong or facile draughtsman, while Latrobe was both; he left comparatively few drawings of any kind and almost no free hand drawings. We are somewhat consoled for him when we learn that further examination of Latrobe's design revealed "faults enough." It seems that Bulfinch had much ado to give the Building Committee any clear idea of what the proposed building should look like, and finally had a model made. This was understood, he writes, "but there was one universal remark, that the dome was too low, perhaps from a vague idea that there was something bold and picturesque about a lofty dome." Among the designs which he submitted, that showing the loftiest dome was nevertheless chosen, and the Cabinet even expressed a wish that the dome might be "raised higher in Gothic form, but this was too inconsistent with the style of the building to be at all thought of by me."

I wish it were possible to quote here his impressions

of Washington in 1818. "One is immediately convinced that a great city must here grow up," he writes, but "the public buildings are distant two miles or more from each other, and a small village has grown around each." "Society is on a pleasant and independent footing: there is full opportunity to engage in a constant succession of parties, particularly in winter; but the doing so is left to every one's choice." He found hackney carriages expensive, and the walking "intolerably muddy." Two of his sons soon returned to Boston, for their father's loss of fortune made it necessary for them to go into business after leaving college. Of the elder of these sons I must speak a word, because of my delight in a certain poetical protest of his against his occupation as a lumber merchant. This young fellow must have been of a temperament and a versatility to fit him for a more brilliant calling, or perhaps his gifts were the more concentrated through the slight demand made upon them by the unromantic duties of a lumber merchant. The mother and most of the children seem to have turned to verse at any time with the greatest ease of expression. Miss Bulfinch says of the poet: "A string of verses is still preserved, written in 1820, where, with the family facility for rhyme, his lively genius depicts his thralldom:"

With the morning's earliest ray
Begins the Lumber merchant's day.
Lumber, Nails, and Glass and Lime
Demand his care, demand his time,
And drive him from his bed of down
To scour the streets and range the town,
Alert for purchases and sales
Of Lime and Lumber, Glass and Nails.
But if by chance protracted slumber
Keep him from Lime, Glass, Nails and Lumber,
In dreams, Lime, Lumber, Nails and Glass
Before his troubled senses pass,
And visions dire of Suits and Jails
Recall to Lumber, Lime and Nails.
What tho' Lime, Glass, Nails and Lumber
All his leisure hours encumber,
Lumber, Lime and Nails and Glass
Make the long days swiftly pass.
Heavy are Lumber, Nails and Lime,
But heavier far is idle time.
I own that Lumber, Lime and Nails
Seem less fit for maids than males,
And dandy bucks don't care a dime
For tons of Lumber, Nails and Lime;

. . . . and so on for many verses.

Although the bulk of Bulfinch's labor for twelve years on the Capitol may be said to have been in carrying out



STATE HOUSE, AUGUSTA, MAINE.

the main lines of Latrobe's plan according to the drawings given him, still certain parts and features are wholly his own creation and design. The western extension or central body is his principal work, and as it stands to-



OLD MEETING HOUSE, NOW ST. STEPHENS' R. C. CHURCH, ATLANTIC AVENUE, BOSTON.

day it shows his hand. The other important change was in the dome, which, however, no longer exists, having given place to the present dome. Various minor changes made as the work went forward are also due to Bulfinch. In June, 1829, the work was so near completion, that, considering it possible to carry it forward from the drawings in hand, the Commissioner wrote advising him of the termination of the office of Architect of the Capitol. President Jackson, however, at Bulfinch's own suggestion, decided to retain him another year, during which time, besides his supervision of the Capitol, he visited Norfolk and reported to the Secretary of the Navy regarding the Navy Hospital.

Bulfinch ended his professional life in Washington, and returned to Boston in June, 1830. After this time, though we learn that he was "still ready for work, and anxious not to be idle," he does not appear to have done much of great importance except the State House at Augusta, Maine, finished in 1832. He retired very much into the circle of his family and friends, and finally returned to the old family home in Bowdoin Square, where he died in 1844, not long after his wife.

His letters show him retaining a critical interest in the better questions of the day, and exhibit a great clear-mindedness and tolerance, which, indeed, he had never been without. One of his sons inherited a distinct love for architecture, but none of them practiced it, perhaps on Bulfinch's own advice. He appears to have had a strange misappreciation of the material development which was to come to us. When he was "asked if he should train up any of his children in his own

profession, he replied with charming naïveté that he did not think there would be much left for them to do. The States and prominent towns were already supplied with their chief buildings, and he hardly thought a young man could make a living as an architect." Yet how many architects have since made a better living than this modest master!

A Columbus Monument at the National Capital

At last there is to be a fitting and adequate memorial of Christopher Columbus at the National Capital, an appropriation of \$100,000 for the purpose having been made by Congress.

The Monument Commission has discarded the first idea of a memorial arch. The work is to be erected on the plaza in front of the Union Station, and the Commission has accepted a design, so far as architectural features are concerned, prepared by Mr. Burnham of Chicago and other architects of the Union Station, and has invited several well-known artists to submit designs only for the sculptural treatment of the memorial. The general scheme of the accepted design is a semi-circular fountain with the figure of Columbus standing on the prow of a caravel facing the Capitol. The fountain will have an extreme width of sixty-four feet and will have a large recumbent lion at each side east and west. The sculptural features of the memorial will be decided by competition, the terms of which have just been announced by the Commission. Although this competition is open to all artists who choose to enter, six sculptors were specially invited to submit designs. These artists are Augustin Querol of Spain, Augustus Revolta, and Cesare Zocchi of Italy and F. W. MacMonnies, Daniel C. French and Lorado Taft of the United States. The result will doubtless be a beautiful and enduring work of art.



MASSACHUSETTS GENERAL HOSPITAL, BOSTON.

Several public monuments or statues are to be erected in Washington within the next year or two, the most important of which is the Grant memorial in the Botanic Garden, for which Congress appropriated \$250,000. Next comes the Columbus memorial, to cost \$100,000, while the expense of no other monument authorized by Congress is to exceed \$50,000.—*Washington Star*.



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CHAIRMAN COMMITTEE OF EDUCATION

Stated Meeting of the Society of Beaux-Arts Architects

A quorum not being present at regular stated meeting of the Society on May 20, the meeting was adjourned to June 4, at Luna Park, Coney Island.

The meeting was called to order by the President, about fifty members being present.

Three new active members were elected,

Messrs. G. A. Applegarth of San Francisco,

Wm. E. Groben of Philadelphia,

Geo. B. Ford of New York,

and one associate member,

Mr. Arthur F. Sutcliffe of New York.

The President reported the formation of the first local committee of the Society in San Francisco.

The San Francisco committee, composed of twelve members, purposes to take care of the competitions of the Society on the Pacific Slope, in this way obviating the necessity of shipping the competition drawings to New York.

The Committee on the Building Code Revision (Ernest Flagg, chairman) reported that confining itself to the subject of light and area of building, it has consulted with the like Committee of the American Institute of Architects, and, on the invitation of the Municipal Code Revision Committee, they have jointly drawn up a definite plan for their consideration and have sent a copy of this to each member of the Society.

The meeting then adjourned.

Absurdities in Stage Settings

PROF. HERKOMER, R.A., recently delivered an address at the Institute of British Architects on "Scenic Art." Criticising the modern theatre, he said some new form of auditorium, with an entirely different arrangement of the seats, was badly needed, and this, he thought, could be done without too much space being taken up. The aim should be to provide seats from which the full work of actor and scenic artist could be seen by the spectators. Some people thought scenic art was antagonistic to the drama, but he held a different opinion. The real secret of that art lay in illusion. The make-up of the background should be as carefully attended to as was the make-up of the actor; yet the audience, which howled down the slightest inconsistencies in the actor's portrait, took no notice of the inconsistencies in the scene. At present it was thought proper to have pieces of sky hanging in strips, like clothes on a

line, and to have pieces of the firmament coming together at an angle in the corner of the stage. It was strange that tradition stuck to the stage more than to any other form of art.

Still, he would not destroy tradition in that direction. The present system for footlights was bad in every way, and very inartistic. There was a strange commotion when candles had to give way to lamps, for the actors, who were not always such swells as they are to-day, regarded the stumps of the candles as their perquisites. The proscenium in all theatres was much too high, and, for many scenes, far too wide. He proposed a contracting proscenium, which would adapt itself to the particular scene which was being portrayed. He claimed for scenic art a position not inferior to any form of pictorial art, and in this connection condemned the inconsistency of flashing a "moonbeam" upon an actor at all points of the stage. He had known a case in which two actors of equal prominence were on the stage at the same time, and each had a "moonbeam."—*London Standard*.

Correspondence

HARTFORD, CONN., JUNE 10, 1908.

EDITOR THE AMERICAN ARCHITECT:

SIR:—In the description accompanying your illustration of the proposed cathedral for San Francisco, issue of June 3, it says that the "plans were referred to Mr. Hobart for further correspondence with Mr. Hare, touching such revision of the structural plans as may be needed to adapt them to steel-frame construction." Mr. Bodley's design was evidently made without any reference to modern steel construction or the more recent reinforced-concrete system; for its flying buttresses and pinnacles, intended to withstand the thrust of the vaulted ceilings, have no place either in modern steel construction or in reinforced concrete work.

Messrs. Heins & Lafarge, in their description of the design for the cathedral of St. John the Divine, call attention to the absence of this mediæval method of construction in their design; and the architects of the beautiful design adopted for the Roman Catholic Cathedral at St. Louis have frankly adopted modern methods of construction, producing a radically different design from that for San Francisco.

It is difficult to see how the fine design of Mr. Bodley can be "adapted" to steel construction and still preserve its architectural character; for surely sham flying buttresses and sham pinnacles that serve no purpose would not be tolerated in such a building.

To be a truthful expression of the construction proposed would involve an entire change of design, and it has been by no means proved that in making such a radical change the structure would withstand the shock of an earthquake any better than if carried out as designed by the late Mr. Bodley. To be "adapted" to steel frame construction it would naturally take on a form more resembling the St. Louis Cathedral or the new Roman Catholic Westminster Cathedral in London, than the Gothic design of Mr. Bodley. It is to be hoped that Mr. Hare will not attempt to bend the steel frame, which is based on a principle of absolute stability, so as to give the appearance of a structure that is based on the nice balancing of its parts, on a principle of elasticity.

Truly yours,

GEORGE KELLER.

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Stairway, Rouen Cathedral, Rouen, France.

ARCHITECTURE, while not a form of art which can readily be submitted to museums or other institutions for approval or acceptance by duly constituted judges, can be said to give much evidence of general improvement. It is probably true that many monstrous structures have been reared within the past few years, but progress is not determined by the amount of poor or mediocre work that has been done, but only by the condition that some exceptionally meritorious work has been accomplished. If one problem has been more thoroughly solved than it ever was before, if one building has been erected more nearly meeting the requirements of architecture in the highest sense than they have ever been met before, then it would appear that progress has been achieved, regardless of the number of failures that have been recorded in the interim.

IF there is one thing more apparent than another in connection with the study of Mediæval architecture it is the absolute lavishness shown in the use of materials, time, space, and labor. If the architects of the great cathedrals erected during the period from the twelfth to

the fifteenth century had been hampered by the modern demands of economy and utility it is doubtful indeed whether such incomparable results would have been attained. It is the history of architecture that only when men's minds have been fired by the loftiest ideals has the art flourished. When confronted by the economist, the utilitarian and the calculator, the art of architecture, which properly comprehends both the arts of construction and design, is apt to deteriorate into mere imitative building; for without generous enthusiasm design is impossible, and enthusiasm dies when too greatly restricted.

HOWEVER, conditions in this country are probably more encouraging than ever before, and of recent years there are many indications that funds will not be lacking for the ultimate erection of a group of churches and cathedrals that will in many respects equal their marvelous prototypes in Europe. A careful study of recent examples of what is conveniently and comprehensively called Gothic in America reveals the same reasoned, logical and coherent structures, that characterized the period of Mediæval architecture. Every feature appears inevitable and indispensable. There is no suspicion of constructed ornament rather than ornamented construction. If, then, too great restrictions are not placed upon our architects by the economist, and the modern demand for utility, it would appear that no great apprehension need be felt as to the architectural excellence of our future Christian temples. While they will lack age and history for the time being, they will scarcely lack beauty.

OF more than passing interest to architects and engineers is the result of a test conducted by Dr. Glazebrook at the National Physical Laboratory of England and reported in *The Builder* of May thirtieth. The object of the test was to ascertain the effect produced on mild steel by embedding it in concrete. A number of specimens of steel cut from a bar one and one-half inches square, including some that were turned down to one inch in diameter, were buried in the centers of Portland cement concrete blocks in December, 1906. The blocks were immersed in water several times a week for a period of twelve months and were then exposed to the air for three months, after which several blocks were broken open and the steel minutely examined.

THE report states that no trace of chemical or other action could be detected, and in the case of the turned bar the metal was found to be practically as bright as when it was embedded in the concrete, while the mill scale on the rough bar was still intact. A microscopic examination of the surface of the turned bar after it had been polished, together with a sample cut from the interior of the same bar revealed no difference in the micro-structure. It is stated that further tests will be conducted with the remaining blocks after they have been exposed to water and weather for a longer period. While the results of these tests seem to indicate, as has been maintained by many, that steel is not only unaffected by being embedded in concrete, but is perfectly protected, the report would have been of still greater interest had it contained a record of the aggregate used and also the size of the blocks or thickness of the concrete surrounding the specimens.

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AND

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New Building for the National Museum

By BERNARD R. GREEN

THE building for the National Museum now under construction in Washington, D. C., is of monumental design and permanent character, and will form the main member of a probable ultimate group, properly related, for the preservation and illustration of natural science.

It will be one of the largest buildings in the city—561 feet by 365 feet and 82 feet in height. It is in four stories, crowned with a dome on the south front, and will occupy the north side of the Mall, opposite the Smithsonian building. The south or main entrance pavilion contains a rotunda of 80 feet in diameter and 127 feet 7 inches clear height, while the crown of the exterior dome is 162 feet 2 inches above the ground line.

Designed mainly for exhibition purpose, its plan is simple, with large undivided interior spaces amply daylighted by means of closely-arranged and very large windows in both the exterior and court walls, besides three great skylights in the main halls. Even a grand stairway is omitted and elevators substituted, to give exhibition space. In this connection, the dark space under the rotunda is utilized for the lecture room.

Its site is so low that no cellar or sub-basement is provided, and its basement or ground floor is but fourteen feet above the Potomac River level.

For the accommodation of pipes and conduits large covered communicating trenches are built in the basement floor.

On this floor are located the heating and power plants. The building contains ten acres of floor space, 11,500,000 cubic feet, and will cost \$3,500,000, or about 30½ cents per cubic foot.

In the basement under the rotunda floor is a special auditorium for lectures and scientific meetings, with a seating capacity of five hundred. It is circular in form and covered with an elliptical dome with niches and penetrations in Guastavino construction, and will depend on artificial illumination.

Both the inner and outer shells of the rotunda dome will also be of Guastavino work, the inner shell surface toning in color with the Indiana limestone constituting the principal finish of the entire rotunda.

The construction of the building is fireproof throughout. The exterior walls are of white granite backed with brick, and the court walls of brick trimmed with granite; the face brick being cream-colored and hard. The interior structure is of heavy steel frame, with floors and fireproofing of brick and terra cotta, and the roof of steel with covering shell of terra cotta and reinforced concrete, water-proofed with copper and heavy slates. Heavy slate will also cover the dome and the roof of the main pavilion. All the slate will be green, from Vermont quarries.

The granite of the exterior walls is from Milford, Massachusetts, for the basement; from Bethel, Vermont, for the two main stories, cornice, and the main pavilion;

and from Mt. Airy, North Carolina, for the attic story. That for the court walls is blue white from Woodstock, Maryland.

The floors of the building are generally of warehouse strength, to provide for occasional exceptionally heavy objects anywhere upon them.

The basement floor is directly on the ground.

The first floor will carry 500 pounds, and the other floors 200 pounds per square foot.

Brick columns or piers are used wholly in the basement, but the columns in the other stories are of heavy steel, fireproofed.

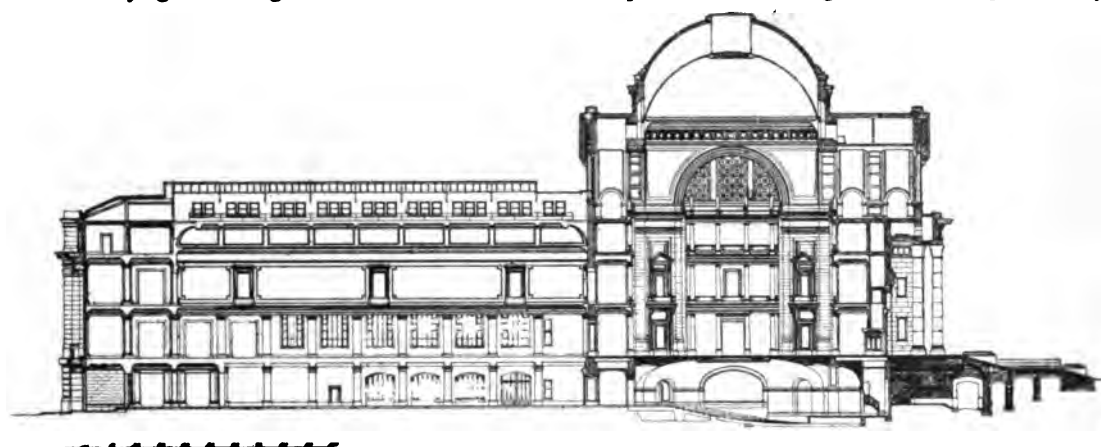
The walls, piers, and ceilings are generally to be finished in strong lime plaster smooth finished, to receive an unpronounced flat tint to harmonize with the floors, which throughout the exhibition halls will be of a quiet yellowish marble mosaic deemed most favorable and satisfactory for such exhibition halls.

The principal windows are of ground polished plate glass to temper the direct rays of the sun without the use of mechanical shades, and especially to avoid or minimize the use of fibrous shades. All of the other windows are also of polished plate, but clear glass, admitting a flood of daylight throughout.

ment, is forced up a single riser of eight inches near the rotunda to the loft in the roof. Thence it distributes by horizontal graded pipes through all the lofts of the building and thence downward through small pipes in all the exterior wall piers connecting with all the radiators at every floor on the way to the basement story, whence, collected into mains in the tunnels under the floor, the forced flow returns to the boilers. All the pipes are therefore extremely small for the amount of heating surface served and the distances traversed in the major and minor circuits.

The building will be thoroughly wired for electric illumination both from ceiling and floor outlets, furnishing a very wide range of special lighting for local objects or exhibits, as well as very general lighting of the interiors of the halls. All the wiring is in concealed circuits.

The building is intended to be completed and occupied by the Museum organization in 1909, and is the second of the modern permanent buildings to be located on the Mall. The other is the building of the Department of Agriculture, of which two wings only are thus far built, while the Museum building is complete. Other than the Smithsonian Institution and the Washington Monument, the previous buildings are of a practically temporary



SECTION ON N.E.S. AXIS

All skylights and ceiling lights are of rough wire glass.

Excepting a skin of boards on the floors and the window frames, trims and doors of the attic, which is to be used for laboratory purposes, and the window frames and the few doors of the basement story, the building is of perfectly fireproof material throughout.

Some marble finish of simple design and some bronze grilles and main doors will embellish the north main entrance, and an appropriate marble floor will form parts of the design of the main rotunda in connection with the general limestone treatment of the interior.

On account of the very large and generally connected spaces comprising the interior of the building and the means of simply and sufficiently controlling the air, natural motion is mainly depended on for ventilation. The windows are all provided with minor openings, and three large exhaust fans will be placed in the loft over the three main halls, but these will largely serve the needs of the laboratories in the attic and to counteract the radiated roof heat in summer, rather than to directly ventilate the exhibition halls.

The warming of the building, excepting the rotunda, will be chiefly by direct radiators placed under the windows and operated by forced hot water circulation. In this system the water, warmed by the boilers in the base-

ment, and consist of the originals for the Department of Agriculture and National Museum, and of the building for the Army Medical Museum and Library.

Although one of the simplest and plainest of the large monumental buildings under construction in Washington at the present time, the new Museum embodies, to an unusual degree not only fine architectural design, but constructive and mechanical science.

The warming and electric lighting equipments are the result of refined computations and adjustments for high economy with the simplest forms of apparatus. Direct and durable systems of pipes and conduits are installed of uncommonly small sizes, concealed in the walls and floors, while securing uniform and even distribution and service for any probable arrangement or rearrangement of the occupation of the spaces, simultaneously with any special local requirements anywhere. The outfit includes passenger elevators at each of the main entrances and two large and powerful freight elevators for handling the materials of exhibits.

The plan and equipment of the building are on the general and not a particular equation, for almost any desired particular case of occupation and need may be realized without serious, if any, change in the main

A notable feature is the large provision of laboratory and storage space, practically equalling that for exhibits.

Domestic Work of the Renaissance in England

An Address by Henry Tanner, Jr., F.R.I.B.A. Illustrated with Sketches and Photographs by the Author.

PART II—THE ENGLISH BUILDERS

The English master builders, masons, and carpenters who were carrying on work during the period described in the preceding article and continued to do so for some time after Inigo Jones, and who were further removed from the centers of foreign influence and only slightly affected by it, were responsible for some of the most charming and picturesque work in the country, especially as they refrained, generally speaking, from an excessive use of ornament. Their work was not brilliant in design, but full of common sense and free from striving after effect; the public demand was not yet for a skilled designer, they were content with the comfortable traditional work handed down from father to son, and very adaptable to their needs. There was no requirement for the trained designer as at the present day; the various trades would submit their designs or frequently only a plan, and rarely models, to the owner or client, who seems to have been his own general manager, and himself supplied the various materials and entered into rough contracts, which were drawn up with brief outline specifications. These men occupied the nearest contemporary position to the present-day architect; they made their own plans and elevations and worked out the details with the assistance of their workmen, who appear to have been more like artists in their respective grades than mere workmen, as we understand the term (Fig. 5).

There must have been a large number of these men at this period, but only comparatively few are known; some names have come down to us attached to a particular trade or locality, and we might perhaps briefly refer to one or two. The different local materials affected architecture at this time almost more than we imagine nowadays, transportation was very difficult, and local materials had almost entirely to be relied upon. In the well-timbered west country, John Abel, a carpenter of Hereford, who was born about 1600, made a name for himself for his half-timber buildings (Fig. 6); the Leys Woebley is a very picturesque design, as is also the school-house at the same place; Butchers-row, Hereford (Fig. 7) and the old Town Hall, now destroyed, and the Grange at Leominster re-erected and altered, are all assigned to him. There are many examples of the half-timbered work of the period in this quarter of England. The work in the western counties was, generally speaking, far more elaborate than that in the other "half-timber districts," but the ornament in all cases was in varying degrees under the foreign influence, but was not so "patchy," if one may be allowed the term, as when executed by foreigners, although the English building tradition plainly formed the undercurrent of the whole design.

In the stone districts in England the work generally seems even less influenced by the foreign style, and, the material being harder, ornament was less used, especially in the northern districts, though evidence of the foreign element there is not lacking (Fig. 8). It was not offensively predominant and was used with considerable success, bearing in mind the slight knowledge the design-

ers had of their grammar, and the real spirit of the style in which they imagined that they were working.

In Northamptonshire and Yorkshire and the Cotswolds stone houses abound. Kirby Hall, of which we will talk later (Fig. 8A), Rushton and Apethorpe Halls, Glington Manor, a small example from Stafford and Barrington Court, are a few examples drawn at random, the difficulty being here, as throughout this subject, to know which to select. The work at Cambridge of Grumbold and Simmons (Fig. 9), and at Oxford of Holt and Acroyde, is all full of interest.

The brick and stone buildings of this period, especially in the large houses, was very extensive (Fig. 10); Moyns Park, Kentwell Hall, Aston Hall, Blickling Hall, are among the most notable, and each one of these is in itself a monument to the period. In the house from Wroxham



FIG. 5.

and Pococks School at Rye you see two early and interesting domestic buildings in brick and stone, and which were doubtless influenced by the Dutch immigrants, who settled round the southeast coasts. Another type of house not yet mentioned is that built of timber framing and brick. This was quite a common method of construction, though later than those above referred to.

We cannot pass on to the next period, that of Inigo Jones, without some reference to a few other well-known names of the earlier time; John Thorpe, about whom more discussion has arisen than any other man connected with our Renaissance architecture, was a surveyor as well as an architect, being, I should imagine, one step further towards our present position than the master builders whom we have just referred to, and, while doubtless the author of some of the buildings assigned to him, may have only surveyed others for his clients, and by that means have got his name connected with them. It seems certain that he was the author of Kirby Hall, in Northamptonshire, with its famous bay windows, great courtyards, and interesting though rather unscholarly detail, like most of that executed at that time. The

whole building, with the exception of a small part renewed by Inigo Jones, is of the period and must have made an impressive sight in its palmy days. Thorpe also was probably the designer of Twyford Castle and Hol-

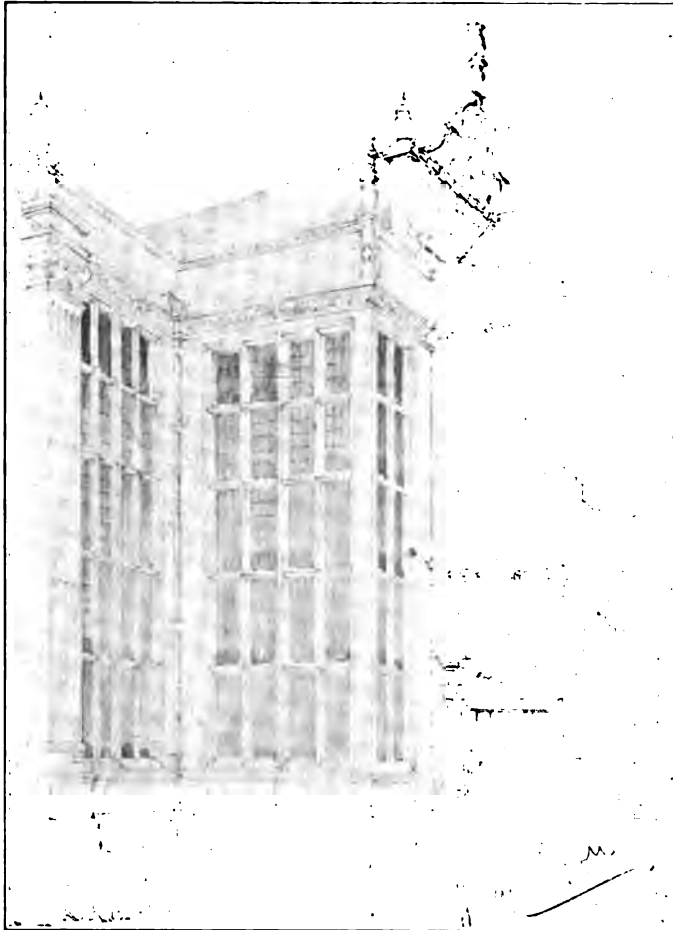


FIG. 8A. DETAIL, KIRBY HALL.

land House, and part of Knole Park, in Kent. Sir Thomas Tresham has also been the cause of considerable controversy, the question as to his having been architect and not merely client for the work at Rushden, Lyveden, and Rothwell Market House never having been satisfactorily settled.

The real Renaissance in England came about through the instrumentality of one man, Inigo Jones, and he, having thoroughly mastered his art, achieved the unique distinction of changing the whole style of the architecture of a nation. As I have remarked above, the English house plan was changed entirely at his hands, and the designs of the work in the country under his guidance were no longer scraps of classic ornament and detail grafted on to English work, but the English Renaissance proper. A great many houses have been assigned to him in which probably he had no hand, and also a large number which any of the master builders of the period could quite well have done, being of the character referred to above—that is, lacking in grammar and ignorant of the real meaning of classic work. It was after Jones's second visit to Italy that he started working seriously at architecture; before, most of his time had been occupied with masques and as surveyor to Prince Henry. Among his earlier work was the Queen's House, Greenwich, about 1619, the noticeable feature of which is the loggia on the first floor. In the same year

the banqueting house was destroyed by fire, and he was commissioned to design a new one. He produced a fine plan for a new palace, the first block of which was soon started, but unfortunately this building, with which you are all quite familiar, was the only part of his magnificent design ever executed. Jones carried out a goodly amount of domestic work in the neighborhood of Lincoln's Inn-fields; Linsay House and the houses in Great Queen-street being very similar in treatment, the latter being a very interesting example of brickwork of the period, with a bold cornice, the roof starting from same without any blocking course of parapet and with hipped dormers, which help to give the building a less formal and more domestic appearance. Pendhill, in Surrey, is another interesting design in brick, built in 1636, very simple in treatment, the only ornament being the paneling on the walls and chimney stacks and the brick rustication to the porch. Raynham Hall, in Norfolk, is a very striking design, the most interesting part being the very original treatment of the gables with the volutes and the pediment at the top, the idea evidently being to do something unconventional and not too rigid for a domestic building of brick and stone, such as an orthodox pediment, the full width of the projecting wing; but, curiously enough, on the garden front a strictly classic design for the center feature has been adopted,

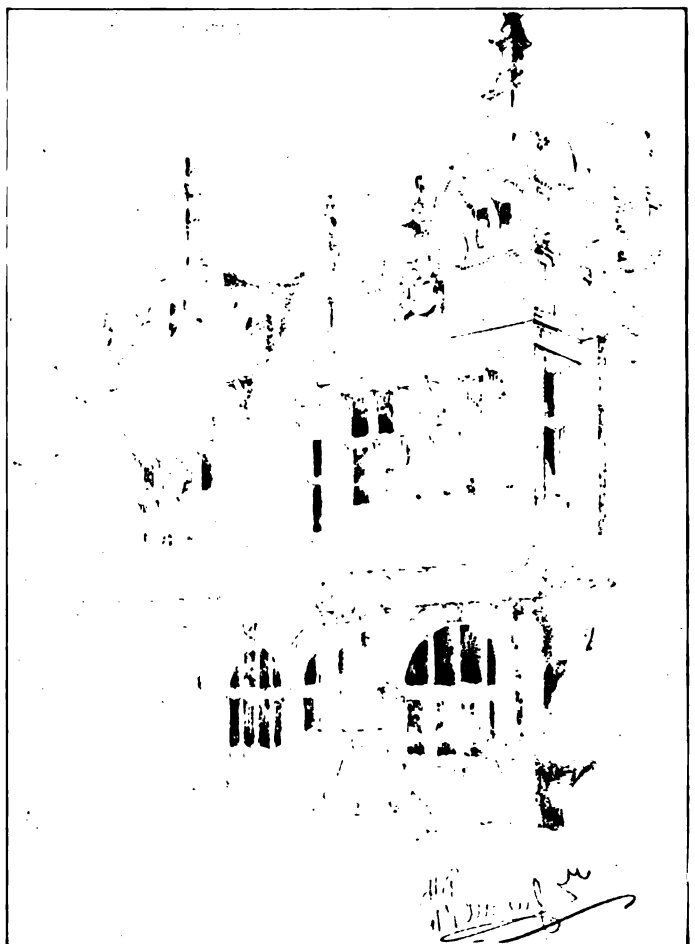


FIG. 8.

probably with a view to accentuate the position of the great rooms, but it is possible that this is of a later date. The main entrance door is a very refined and delicate piece of work, and the carving in the frieze might

quite well have belonged to the later Gibbons period. The entrance hall and the salon on the first floor are very fine rooms, but there is no grand open staircase to the latter which one would have expected.

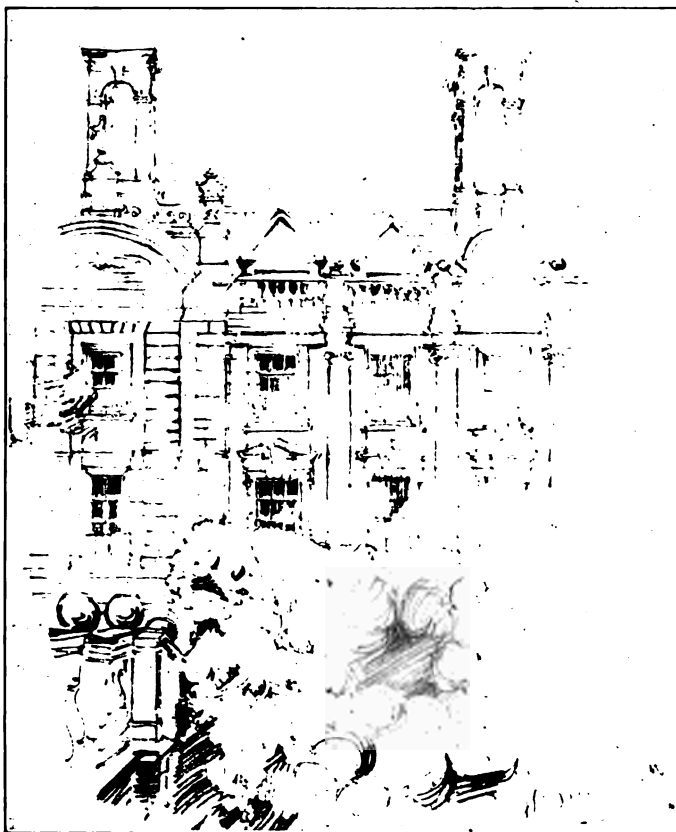


FIG. 9. CAMBRIDGE.

The house has some good plaster ceilings, notable as among the very earliest of their kind, with classic cornice and mouldings, and ribs richly decorated with fruit and flowers.

Swatley Hall, Uxbridge, is of particular interest, as it was erected about this time, and shows a very similar treatment to the gables, as at Raynham, and, though on crude lines generally, is an effort to attain good proportion, which shows so clearly the line between the earlier and later renaissance.

Stoke Bruerne Park, in Northamptonshire, which I have referred to above on account of its remarkable plan, was built for Sir Francis Crane, and is no doubt of Italian origin, and whether he or his client brought over the idea it is difficult to say. The main building has unfortunately been destroyed by fire, and was not rebuilt in its old position. The main building, as shown in *Vitruvius Britannicus*, has a very large order with an attic over and lantern on the roof similar to Coleshill, to which I will refer later.

Jones did some work at Kirby soon afterwards, the alterations to the porch, and doorway, and gallery in the great hall, all quite correct in treatment, but it is difficult to believe that he did the ceiling, which, though very probably of the period, is not nearly as true in detail as the other work; it is all in a very ruinous state unfortunately, as you will see from the plate taken a year or two ago, and far worse than when I first saw it some eight or nine years ago.

Wilton House, which Jones rebuilt for the first Earl of Pembroke, contains some of his best work; the only part of the old building he retained was the center portion of the east front, but a large amount of his work has since been rebuilt. The south front is his design as he left it (see preceding article), and is as well known for its beauty as the famous double cube room, which is in the center of this façade; it is very simply treated, with good broad wall surfaces, side pavilions, raised one story, and a particularly charming center feature being an Italian window treatment, with a balcony in front, for which Jones designed a double flight of steps which were never executed. The whole suite of staterooms along this front is very richly decorated, especially the double cube room. This is in various marbles, the general decoration of the room being white and gold.

The most perfect work of Jones remaining is Coleshill, in Berkshire, with the magnificent staircase, a survival of earlier times, leading up to the dining-room on the first floor. The two main elevations are the same, singularly free from ornament, the windows of one type only in each floor. No order was used, the chief characteristics being good wall space, a fine cornice, a roof which did not strive to hide behind a balustrade, simple dormers, very massive chimneys, and to complete the scheme a balustrade round the flat on the top of the roof with a very well-proportioned belvedere. There is no straining after effect, proportion and good detail are alone relied upon, and I



FIG. 10.

venture to say that this house is among the very first English Renaissance examples of this size, even if it is not justified in claiming the first place. The interior is full of good detail, and has some remarkably good ceilings.

Another of Jones's late works was the alteration of Forde Abbey, Dorset. Here his work was mostly internal, and the illustration shows you another grand staircase very richly carved, and with massive newels surmounted by urns. Jones died in London in 1652, at the age of seventy-nine, in evil days for architecture, as very little work was done during the Commonwealth.

Of Jones's followers we know but little; during their time there seems to have been an extraordinary number of curious mixtures of architectural styles carried out, as at Burford Priory, built for Speaker Lenthall. This was an entirely new house, but doubtless a goodly number of the examples of this sort were due to the patching-up of old Gothic work in the style of the period.

He had, however, one distinguished pupil in John Webb, whose work closely resembled that of his master. He built Ashdown House, not very far from Coleshill, and executed some work at the Vyne, Basingstoke, but his best domestic work was Thorpe Hall, near Peterborough, a good and simple design, based on the same lines as Coleshill. There is a very good staircase, and the bottom newel shows, I think, the earliest example of the scroll treatment to finish the bottom step. The names of Gerbier, Marsh, and Wynne, are the only others

that come down to us from the time of the Commonwealth and the period linking up Inigo Jones and Wren, and the amount of work they did was inconsiderable; in fact, there was very little done during this time.

The later Renaissance, which arrived at maturity during the next period we have to discuss, may be distinguished from the earlier briefly, by saying that the works of the one were schemed as a whole, the others, in parts; the buildings of the one were completely designed before their commencement, conceived with a due regard to a general proportion and a proper relation of parts, with a view to symmetry and stateliness, and even, perhaps, severity; the buildings of the other seem to have grown, if one may be allowed the term, the initial plans being very slight, and each portion designed as it was reached, a greater picturesqueness, which appeals to everyone, was obtained in this way, and the style, though not so



FIG. 6. THE LEYS, WOEBLEY.

sound as the later, cannot fail to have many admirers. This later Renaissance of ours was more restrained than that of our neighbors, theirs being more profusely covered with decoration, very similar to their early work, which we have noted above; while with us the reaction from early extravagance resulted in work of the opposite kind, quiet and reserved, with very little decoration

Imitated Master-Works

Apropos of the charges recently brought by a prominent art collector in the matter of certain alleged imitations of paintings by American masters, the question has been frequently asked: "If the supposed imitation is good enough to deceive all save a few experts, why is it not, for practical purposes, good enough to buy and to enjoy?" A good answer is given to this by Samuel Swift in the current *Harper's Weekly*. "In the final test of living with such pictures," says Mr. Swift, "they are bound to lose their potency and to disclose their true character. Paintings are like men and women. Their honesty, or the lack of it, is invariably established in due time. Clever and superficially agreeable scoundrels have

their day, and sometimes it is a relatively long one. A picture, to exert positive influence, must be more than a mere record of facts (else a colored photograph could replace it); it must express the character and personality of the artist, the emotional reaction of his own nature under the impact of what he sees. These qualities of a creative artist find utterance in the subject and in the design of his pictures, their relations of line and mass, the depth and luminosity of their color, the habitual but not merely formal or routine strokes of the brush over the canvas. Clever mimics, for amusement or gain, can often stimulate one or half a dozen of these typical modes of expression, but to those familiar with the subject himself such performances are mere feats of virtuosity, and do not deceive for long, if at all."

Experiments on Concrete Columns

THE University of Illinois Engineering Experiment Station has recently issued Bulletin No. 20, Tests of Concrete and Reinforced Concrete Columns, Series of 1907, by Prof. Arthur N. Talbot. This bulletin records experiments upon concrete and reinforced concrete columns which have already become quite notable and which will have a marked influence in fixing the standing of certain types of construction. A feature of reinforced concrete in which engineers and architects are much interested is the column having the concrete hooped or bound with steel bands or spirals. Tests on this form of column reported from France and Germany indicate great strength, but the results have not been considered conclusive and many questions have been raised concerning its applicability to general construction. Engineers and architects have wanted to know more of the action of this new combination of material. The tests here reported will therefore be welcomed by these professions. One of the leading engineering journals, in commenting on the importance of the results of these tests, states that they bear on nearly every phase of importance of reinforced concrete columns. The tests go to show that in hooped columns the steel hooping does not come into action to any great extent before a load equivalent to the ultimate strength of plain concrete, or a little below, is reached, and that up to this point the action of the column is very like one of plain concrete. Beyond this load the column shortens rapidly and the deformation becomes very marked. The extreme amount of shortening is a great disadvantage. The amount of strength added by the hooping before ultimate failure is reached, is two to three times as much as the effect upon an equal amount of longitudinal reinforcement. A discussion of the French and German experiments is made, and observations on Poisson's ratio and data on the phenomena accompanying tests of plain concrete columns are given. This investigation is a further evidence of the importance of the work of the Engineering Experiment Station.



FIG. 7. BUTCHER'S GUILDHALL, HEREFORD.

England's First "Skyscraper"

The foundations are at present being laid at Liverpool for what admittedly is the first skyscraper in England. When completed the building will be 300 feet high.

Old St. George's dock, behind the great passenger stages, has been cleared to make way for these foundations.

In the construction of the building, which is to form the headquarters of the Royal Liverpool Assurance Company, 25,000 tons of gray granite will be used, and it will constitute the finest office block in the country.

A more striking idea of the size of the structure will be conveyed by stating the height of some familiar public buildings: Tower Bridge, 142 feet; Monument, 202 feet; Big Ben tower, 318 feet; St. Paul's cathedral, 366 feet.

It has other distinctive features. Internally it will be lit by two large light wells, measuring 70x70 feet.

Designed by Mr. W. Aubrey Thomas of Liverpool, the building is expected to be completed by the summer of 1910, which, if accomplished, will be a notable feat of rapid building construction.—*Chicago Inter-Ocean*.

The Licensing of Architects

The examination and registration of architects in this country, or as it is sometimes called, the licensing of architects, is already an accepted fact in three States. In one of them, Illinois, the license law has been in force more than ten years, and in New Jersey and California a shorter period. The laws are also being enforced in these States.

In Illinois, where there are 700 licensed architects, only one person is known to be openly violating the law, and that person has been convicted on three prosecutions. The Illinois law has been tested in the courts only on the question raised as to the discretionary power of the State Board in rejecting applicants for license. The board was sustained by the Appellate Court of that State, and the case was not carried by the appellants to the Supreme Court.

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Commendable resolutions adopted by the National Fire Protection Association.

Recent collapse of building in Washington calls attention to apparent necessity of improvement in building laws throughout the country.

ILLUSTRATIONS:

The New National Museum, Washington, D. C. (8 pages).

Additional, International Edition:

Interior of Cloister, Tours Cathedral, Tours, France.
Court in the Archiepiscopal Palace, Milan, Italy.

THAT the time has properly arrived when adequate Federal, State, and municipal laws should be enacted and enforced in such a manner as will, beside affecting other much-needed reforms, unquestionably check the enormous inroads upon the material resources of this country, as well as prevent the needless and appalling loss of life that has been occasioned by fire of late years, is the unanimous opinion of the National Fire Protective Association which held its annual meeting in Chicago recently. Buildings of public assembly, such as schools, theaters, hospitals, churches and department stores, being peculiarly susceptible to calamitous conditions should, in the opinion of the association, receive particular attention at the hands of the recognized authorities, in their insistence upon superior construction and the introduction of adequate apparatus for the extinguishment of fires. Any effort made to reduce the annual fire losses of the country and conserve human life deserves hearty commendation and support. Much is now being written on this subject, and it may be considered significant that the timely resolutions of the National Fire Protective Association, which are undeniably the result of much study and consideration, are found to be in complete harmony with the recent expressions of various other, perhaps less technical, but no less interested and serious associations. Moreover, it cannot be denied that the general agitation is having a certain general effect. If better building laws result, and, perhaps, more important still, courage is afforded to enforce them strictly, much will have been

accomplished. While many communities have power and authority to enact suitable ordinances governing building, and are thus responsible for local conditions, it is more than likely that anything approaching adequate revision of these ordinances will in the majority of instances await an earnest and aggressive campaign of education. Only after the grim facts have been unquestionably demonstrated to each individual community, and their undoubted bearing and full significance clearly shown, will there be much hope of any considerable progress being made toward what would seem to be a most desirable and necessary reform. Possibly the lamentable losses of the past year, while appalling and irreparable, will still serve a useful purpose as examples of the frightful price paid for cheap and faulty construction.

IT is probably too early to unerringly point out the direct cause of the recent partial collapse of an apartment building in Washington during the process of construction, and, in fact, it is exceedingly doubtful whether the various investigations undertaken will ever definitely fix the immediate responsibility. There can be little doubt, however, that the inquiries which are resulting from this deplorable accident will reveal a condition of affairs of the gravest concern to everyone. Nor is there the least suspicion that Washington stands in any way unique in this respect. The insufficiency of building regulations and the inefficiency in connection with their proper application and enforcement in the average city probably constitutes one of the greatest and most universal perils to which a more or less unconscious public is subjected. While buildings of the first class are ordinarily designed by competent and conscientious architects, who also ably superintend their construction, by far the greater number, including the majority of apartment buildings, stores, lofts and tenements, are erected by builders who, through ignorance or a desire to cheapen the construction, in order to effect economy, practically dispense with competent technical advice or assistance, and undertake to build at the least possible cost. Under these conditions the only protection which would seem to be left the public is that afforded by the municipal building code.

IT is not surprising, therefore, that such failures as the one reported in Washington should be a little disquieting to the average person, to whom the thought will probably suggest itself that possibly all the unsafe buildings have not failed during construction. That perhaps some are barely holding together, and will collapse at any time that a slightly increased service is demanded of them. It is obvious that the public is entitled to, and, if thoroughly aroused to a full realization of the true condition of affairs, will eventually demand assurance that not only adequate laws be enacted for the protection of life and property, but that these laws will be strictly and earnestly enforced, guaranteeing that none but proper plans, complying fully with all provisions of law, will gain approval, and, after approval, that a competent inspector will insure, beyond question, the work and materials entering into the construction of the building, conforming rigidly with the approved plans. It would appear that in no better way could confidence in the reasonable stability and safety of our lesser structures under at least normal conditions be established than by acceding to this demand, and at the same time the cause of good building would unquestionably be greatly advanced.

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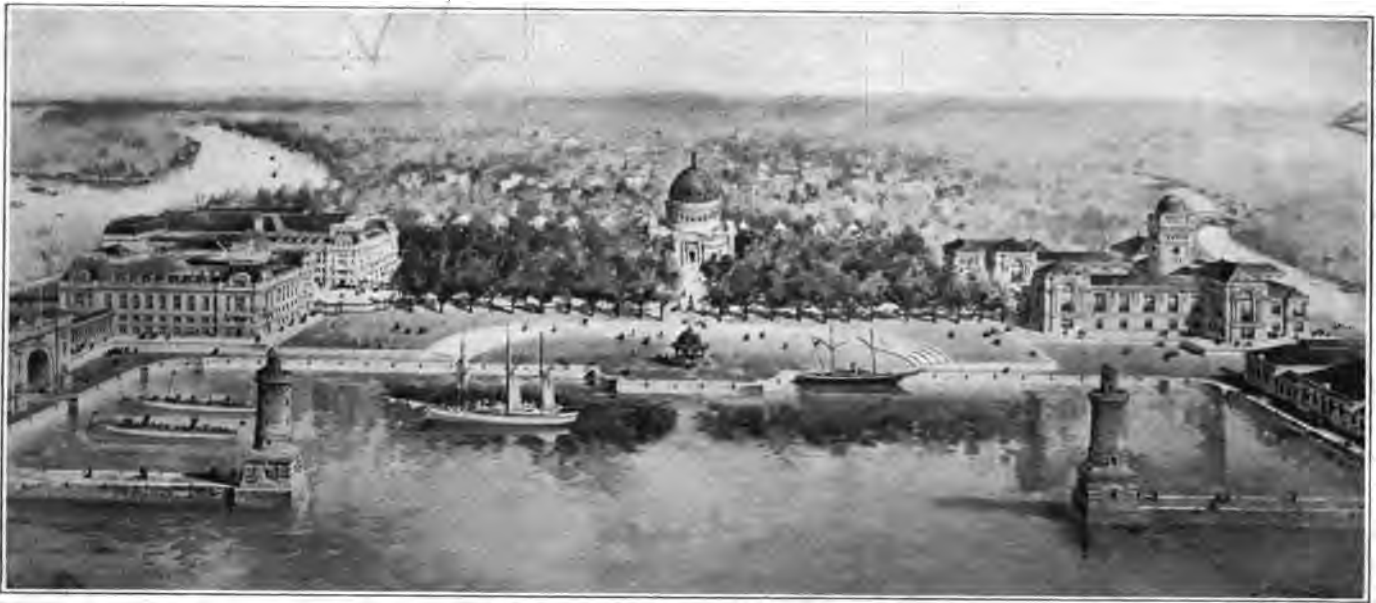


FIG. 1.—GENERAL VIEW FROM SEVERN RIVER (ORIGINAL DESIGN)

New Buildings for The United States Naval Academy, Annapolis, Md.

By ERNEST FLAGG, ARCHITECT

PART I

THE GENERAL PLAN

THE old City of Annapolis and the Naval Academy share between them, in about the proportion of three to two, a peninsula or tongue of land near the mouth of the Severn River. It would be hard to find a more agreeable location. In its way it is quite as beautiful as West Point is in its way, but the character of both land and water is entirely different in the two places.

One end of the Academy ground is open to the bay, and one side lies along the river, the opposite shore of which with its high banks of sienna and green, forms a charming point of view from under the old trees of the Campus. The other side of the Campus is bounded by the town. The yard forms an irregular quadrilateral about 2,000 feet wide by 4,000 feet long. Before the building operations were begun, the land was more in the shape of a triangle, but it has been squared up by reclaiming land on the river side (Fig. 2). In general the old buildings were arranged in rows parallel to the former outlines of the yard. Most of the officers' quarters formed a row along the town side. The Su-

perintendent's house, marine barracks and other quarters formed a row on the bay side, and the boathouse, shops, power house and other buildings an irregular row on the river side. The remaining end was occupied by the main quarters or new quarters, as it was called, and the Armory.

The Parade Ground was on made land towards the bay beyond the Superintendent's quarters, near old Fort Severn, the latter a small round structure which stood on the point when it was first built, but which is now well inland owing to the reclamation of land under water which has been going on for years. This old fort is the father of the Academy, so to speak; many of the old buildings belonged to it. In 1845, when the Academy was founded, it was located on this reservation and the old buildings of the fort were turned over to the navy department.

From what has been said, it will be seen that the old buildings were arranged roughly in the form of a quadrilateral. They were built from time to time as they were needed, wherever there was a vacant space, with the result that many of them were very inconveniently

placed. For instance, the Armory was at one end of the yard, and the Parade Ground at the other. So there was great loss of time in marching and dragging guns back and forth a half a mile by devious paths at every

cause of the selection of this spot for the Academy, was years ago converted into a gymnasium. It is proposed to restore it to its original condition, and preserve it as a relic of the past.

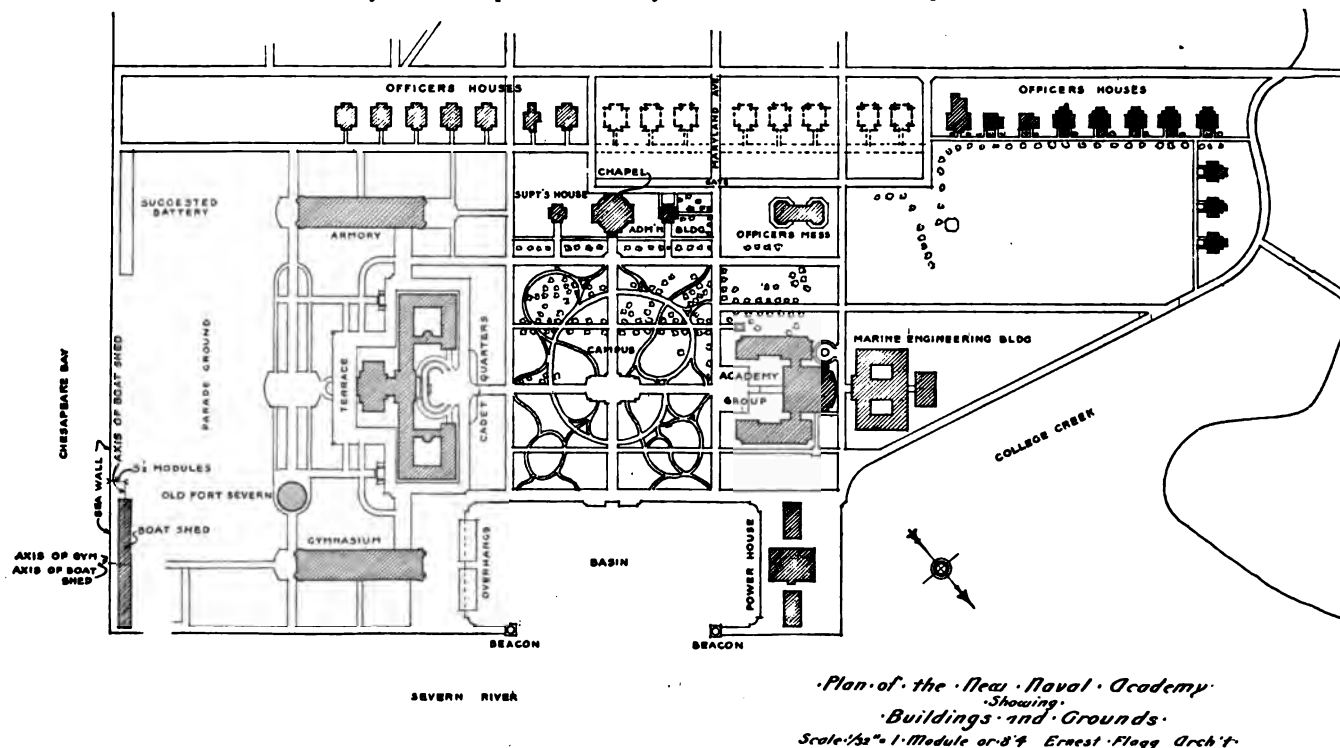


FIG. 2

drill. The midshipmen's quarters was also most inconveniently placed. It is necessary for the men to change their clothes several times every day for the different drills and exercises, each change necessitating a long walk to and from the quarters.

The old buildings were for the most part poorly built

In designing the new Academy, it seemed to me that the proper location for the different parts was self-evident, being fixed by the existing conditions and the uses to which the buildings were to be put.

The great central quadrangle with its old trees should certainly be preserved. The Parade Ground on the low

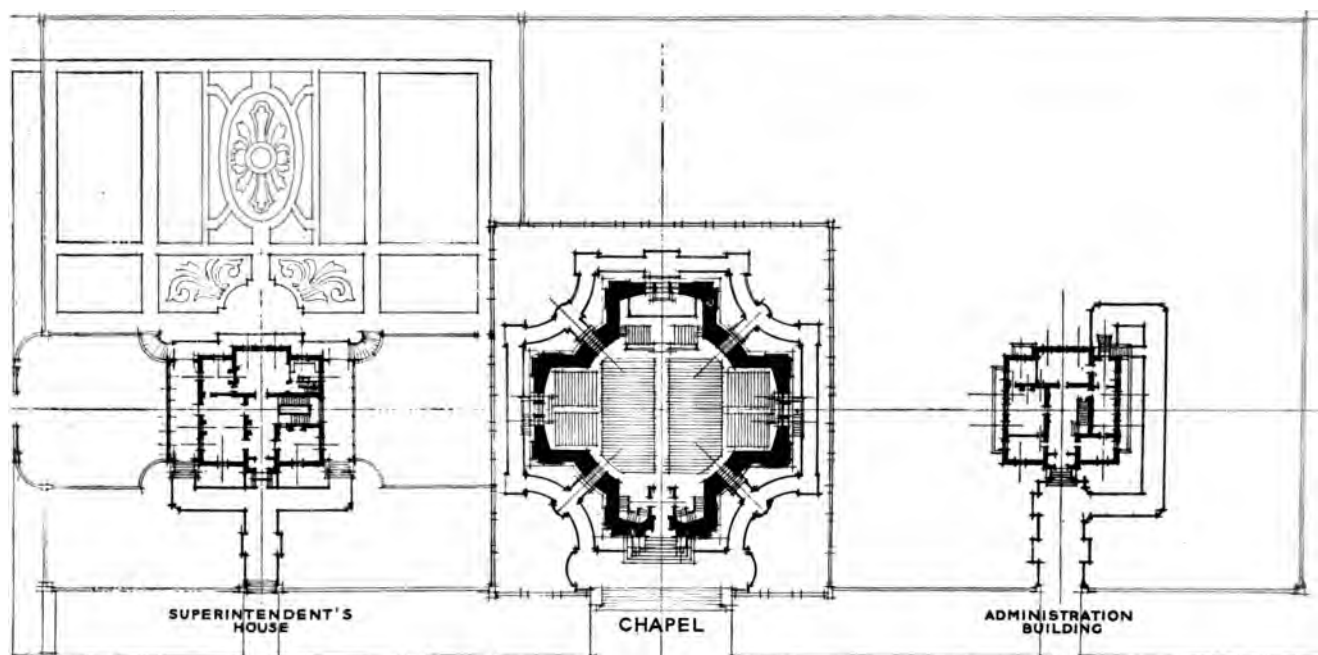


FIG. 3—THE CHAPEL GROUP

and none had any artistic interest. The old library had formerly been a fine Colonial house, but it had been changed out of all semblance to its former self. Old Fort Severn, which is interesting as having been the

made land on the side towards the bay was admirably placed and could easily be enlarged by the reclaiming of more land. The officers' houses were well placed along the town side overlooking the green, and served as a

screen to the town. The boathouse was also well located on the river bank. Before I had been in the place a day, I sketched a plan for the general arrangement of the buildings which has been practically adhered to ever

of the campus. To the right of it was placed the Superintendent's quarters, and to the left the building containing his offices, called the Administration Building. Back of it, parallel with the wall on the town side, is the

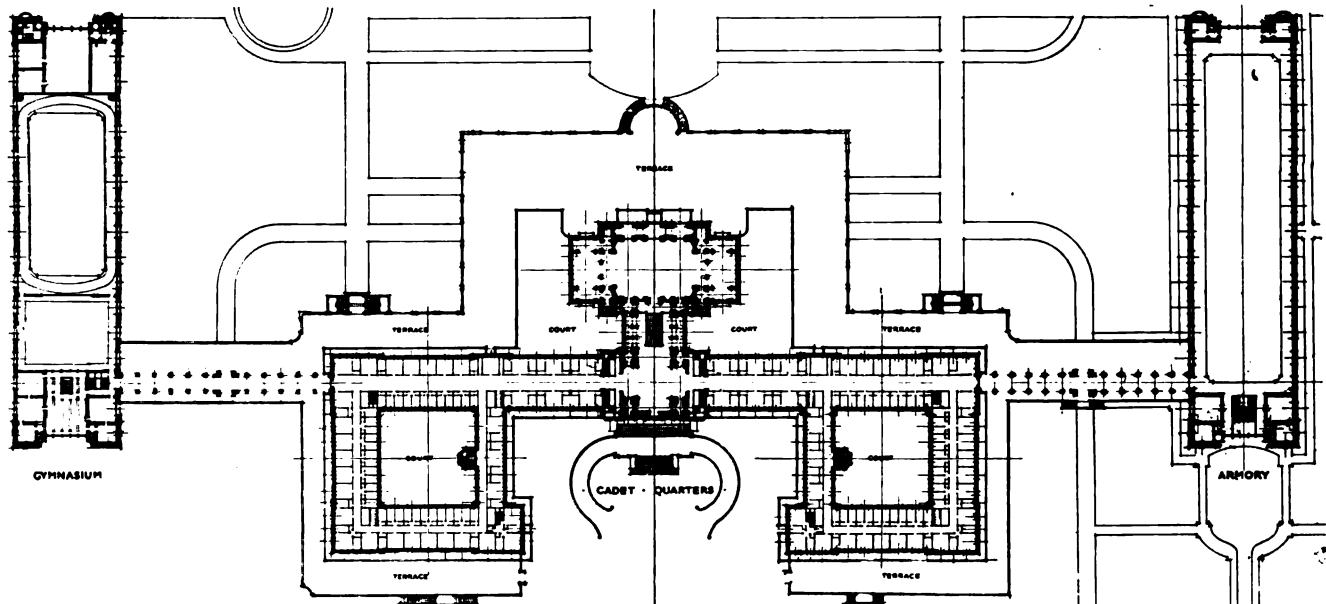


FIG. 4—BANCROFT HALL GROUP

since. This plan provided buildings on three sides of the old Campus, leaving the fourth side, towards the river, open.

Three gates, at the ends of abutting streets, give admission to the grounds from the town, the central one of which at the end of Maryland Avenue is the most important. As the land is highest on the town side, and slopes down to the water, one enters on a gentle incline. The highest point on the property, some thirty feet

long row of officers' houses extending from the bay on the one hand to the creek at the upper end, a distance of about three-quarters of a mile. Up to the present time the row is broken into two sections by two city blocks which project into the grounds (see Fig. 2), but in time these will doubtless be acquired by the Government, and the missing link supplied. When this is done, the row of officers' quarters will be one of the most effective features of the plan.



FIG. 5—OFFICERS' QUARTERS

above the water, is to the right of the Maryland Avenue gate, and here seemed the best place for the Chapel, which from its height would be the dominating feature of the design. In this position it would face the center

I have said that the Chapel facing the river on the town side of the Campus has on one side the Superintendent's house, and on the other side the Administration Building. These three buildings form one of the main

groups (see Fig. 3). At a considerable distance back of them, the long line of officers' houses, drawn up like a battalion on parade, will form the second main group. At right angles to these groups, with its center also



FIG. 6—CONCRETE SKELETON OF CHAPEL

facing the center of the Campus, stands the third great group, also consisting of three buildings; the central one of which, Bancroft Hall, or the midshipmen's quarters, is the largest of all the buildings. To its right is the Gymnasium, and to the left the Armory, and all three are connected by colonnades (see Fig. 4 and Plate 18). These buildings form a gigantic screen between the Campus and the Parade Ground, as shown in Fig. 2. The difference in grade between the higher land of the Campus and the reclaimed land which forms the Parade Ground on the bay side is compensated for by a terrace about eighteen feet high, which extends from the Armory to the Gymnasium, a distance of 1,054 feet. By this arrangement the quarters are brought into convenient proximity to both the Gymnasium and Armory, and the Armory is conveniently placed with respect to the Parade Ground upon which one end of it abuts. The Gymnasium building, which also contains the Department of Seamanship, corresponds to the Armory in size and appearance. Each are 500 feet long by something over 100 feet wide. They are symmetrically placed with respect to the midshipmen's quarters, or Bancroft Hall, as it is called, and as I have said, are connected with it by colonnades.

The third side of the Campus, the one opposite to the Chapel, is entirely open to the river.

On the fourth side stands what is called the Academic Group, but which is one building in three parts, built around three sides of a court (see Fig. 11). The central part at the back of the court, which latter is open on the side toward the Campus, contains the Library and Auditorium. The left wing houses the several academic

departments, and is entirely devoted to class rooms. The right wing contains the Department of Physics and Chemistry. Directly back of this building or group stands the Marine Engineering building with its annex. These two buildings are rectangular in plan, the larger being 267x175 and the smaller being 70 feet wide by 125 feet long. The Academic Group and the Marine Engineering building with its annex may be taken together as forming the fourth great group of buildings.

There remains only one other group. This stands on what is called the Power House pier. It consists of the power house and two shop and storage buildings.

A basin on the river side of the Campus is enclosed on one side by the Power House pier. It is 1,000 feet long and 240 feet wide. At one end of the basin the Power House stands on its central longitudinal axis, and at the other end the Seamanship and Gymnasium building occupy a corresponding place. On the river side two short piers project from either end and partly enclose it. The original plan calls for stone lighthouses or beacons on the ends of these piers, as shown in Fig. 1, but up to the present time they have not been built. Neither has anything been done on the low amphitheatre shown in the picture. I hope that means will be provided to carry out these features, upon which so much of the beauty of the plan depends.

To my mind it is much to be regretted that, owing to what seem to me false notions of economy, the sea wall, which was to have been of granite, has been carried out in cement, except on the Power House pier, and the projecting piece of wall shown in the illustration at the centre of the basin on the Campus side has been omitted. A little money has been saved and perhaps a little convenience gained, but the beauty of the plan has been sacrificed. I hope that sometime, at least a granite coping may be substituted for the unsightly cement, and that a dignified and suitable landing stage may be placed so as to form a central feature on the land side of the basin.

Mention has been made of the Campus, with its old trees and shaded paths, surrounded on three sides by great groups of buildings, and on the remaining side open



FIG. 7

to the water; also of the Parade Ground, screened from the Campus by Bancroft Hall and its flanking buildings, but there is still another field to mention of almost equal extent with the Campus and the Parade Ground. This

field of green, like the Campus, is surrounded on three sides by buildings, while the third side is open to the water. On one side stands the row of officers' quarters, which eventually is to extend from water to water. Another row of officers' quarters at right angles to this encloses the second side, while the third side is separated from the Campus by what I have designated as the fourth great group of buildings. For some years, while the work of rebuilding has been in progress, this green has done duty as the Parade Ground of the Academy, but this is probably the last year that will see it used for that purpose, and hereafter it will probably form the playground for the children whose parents occupy the officers' quarters, which enclose it on two sides.

Everything that has so far been said relates to the most important part of the Academy grounds, but this is by no means the largest part. The Government owns land both on the other side of the river and the other side of the creek, which bounds the part already described, on the northwest.

On high wooded land beyond the creek on the river side is the Cemetery. And beyond the Cemetery, the Hospital. Back from the river is the Marine Barracks, with its Parade Ground.

THE CHAPEL

The Chapel, a domical building, stands opposite the centre of the Cam-

pus on the side towards the town on the highest land within the enclosure, at an elevation of about thirty feet above the water. Its plan is in the form of a Greek cross. Its width and depth are equal, 116 feet inside and 128 feet outside. The rotunda measures 84 feet across. Like many other of the later buildings, its appearance has been very greatly hurt by what seems to me false economy, or the desire to reduce cost at the expense of the quality of the building material used. I have always advocated a reduction in quantity rather than in quality, but without success.

When the original designs for all the buildings were approved by the Secretary, \$400,000 was allotted to this building. Between that time and the date of its erec-

tion the cost of labor and material had advanced fully 30 per cent., and the size of the school had increased so greatly that it became necessary to increase the seating capacity by 25 per cent. Yet the amount allowed for its erection remained constant at \$400,000. It may be asked under these circumstances why the design was not recast in a lower key. Unfortunately this could not well be done. The Chapel was not only to be seen in connection with the earlier buildings, which had been built of granite with a certain degree of richness, but it was, from its location, to be the dominating feature of the whole group. To keep within the limits fixed

and at the same time comply with these requirements I was put to my wits' ends to reduce the cost. The massive walls of the original plan were abandoned for a skeleton framework of concrete with a veneer of masonry.* The granite of the original design gave place to brick, except for the moulded surfaces, and even here terra cotta was used wherever it could be used to save granite. Thus the bed mouldings and mutules of the main cornice are of terra cotta in clever imitation of granite. The gilt copper covering of the dome was also abandoned for terra cotta, while the interior, which I had hoped to have built of solid limestone like the great rooms in Bancroft Hall, was made of plaster. Even down



FIG. 8—THE CHAPEL, FROM GOVERNOR STREET

to the most minute details economy had to be practiced at the expense of the monumental character of the design. The organ case is of plaster; the lamps which were to have stood at either side of the main entrance were omitted, and so on. Some may think that the United States has saved one or two hundred thousand dollars by this parsimony, but I am not one of them. True, the money necessary to make the Chapel what it ought to have been has not been spent, but I don't think it has been saved, neither do I think that many people will greatly applaud the zeal of those who skimmed a work of this kind for the supposed benefit of a nation

*Fig. 6 shows this interesting construction. The beams and posts, which from their delicacy seem to be of wood, are in reality of reinforced concrete.

which is rich enough to have the best and quite willing to pay for it.

I have always been a great admirer of John Paul Jones, and when I made the first rough sketch for the rebuilding of the Academy in 1896, I had in mind that the Chapel should be his burial place, if his remains could be found. In 1900, when I met Mr. Long, then Secretary of the Navy, on the spot, I suggested to him the advisability of using the crypt under the Chapel, which I had provided in the plans for that purpose, and that a search be made in Paris for the body. He seemed to like the idea. At various times afterwards I wrote to the Department, urging that the search be made. To one of these letters I received a reply that General Porter was to institute such a search. When the body was finally found, it occurred to me that

perhaps my importunities might have had something to do with the initiation of the work, and I wrote to the Secretary, asking if it was so, but he dashed my hopes of a share in the honor by saying that I was in no way responsible for the movement; be that as it may, it is of interest to note that the crypt of the Chapel was designed from the start with the idea that it might serve as the final resting place for the remains of the father of the American Navy. Congress has not yet appropriated the necessary money to finish the crypt for this purpose, but it will undoubtedly do so, and I hope to live to see its completion, as

shown in Fig. 7, with the sarcophagus in its midst inscribed with Jones' own words: "Men count for more than guns in the rating of ships."

Plate 1 is a view of the Chapel from the center of the Campus. The building stands on a low terrace. The granite pedestals at either side of the broad flight of steps which lead to it are to be surmounted by trophies consisting of beautiful bronze guns of seventeenth century French workmanship, and anchors with chain. The central frontispiece is composed of Doric columns and piers sixty feet high supporting an entablature and semi-circular pediment. The columns and piers are ornamented with dolphin heads and festoons. Below the main architrave is a large tablet of Levanto marble, which was intended to contain a suitable inscription.

The main doorway, which has richly moulded architrave and cornice, is twenty-three feet high and ten feet wide. This doorway is to contain a monumental pair of bronze doors, the gift of Col. R. M. Thompson, in memory of the Class of 1868. Miss Evelyn Longman was chosen to design the doors as the result of a competition in which thirty-three designs were submitted.

This prize winning model was shown in *THE AMERICAN ARCHITECT* for April 21, 1906, No. 1582. Miss Longman has received great praise for this work, and she is certainly richly entitled to all she has had. These doors will be one of the chief ornaments of the place. Above the pediment the frontispiece is crowned by trophies of arms and armor.

The transept ends are of the same size as the end of

the nave, but their treatment is different, each one contains a large semi-circular headed window filled with delicate tracery in limestone.

The drum of the dome rests on a base of circular steps of granite. It contains a frieze of twenty-four round headed windows, separated by Doric piers. The entablature has a cresting ornamented with blocks and festoons of cable. The dome covering is of terra cotta divided into eight great panels with trophies in relief.

The lantern, also of terra cotta, is surmounted by an obelisk and has a balcony with a balustrade at its base.

The whole interior is finished in imitation Caen stone. The wall

surfaces and vaults are decorated with panels which were intended to receive decorations in fresco.

The monumental window of the chancel, shown in Plate 2, contains stained glass erected by the Class of 1869, as a memorial to Admiral Porter. The altar table is of richly sculptured cherry. The slab is supported by figures representing the four beasts of the Apocalypse.

A low gallery or balcony supported by rich corbels extends around the interior except at the chancel end; it has a handsome balustrade of wrought iron. The organ, Plate 3, stands on a base formed by the entrance vestibule.

The piers between the windows of the drum of the dome have figures built against them representing the different races of men. The great vault of the dome



FIG. 9—THE CHAPEL FRONTISPIECE

is richly ornamented with spiral caissons in the center of each of which is a light. This vault is at a considerable distance below the outer covering; both are built of concrete. The outer shell has a thickness of six inches at the base and four inches at the top which is only about half the thickness in proportion to its size that an egg shell is to the egg, but its strength is ample to carry the fifty-ton lantern at its apex.

OFFICERS' QUARTERS AND ADMINISTRATION BUILDING

The administration building and the Superintendent's quarters occupy buildings of similar size flanking the Chapel (see Fig. 3). They are each sixty-two feet wide and fifty-eight feet deep, and have three stories and a basement. The Administration Building shown in Plate 6 contains the Superintendent's office, the Academic board room and various other offices of the Administration.

The Superintendent's quarters has two principal en-



FIG. 9A.—NORTHEAST END OF THE ARMORY

trances, one for the ordinary use of the family giving upon the terrace (Plate 5), and another entrance, for use at receptions and other social functions, on a lower level preceded by a courtyard seventy feet wide and one hundred feet deep, entered from Governor Street. This court was intended to be furnished with a high wrought iron grille and gates, but these were omitted to reduce the cost.

THE ARMORY AND BOAT HOUSE

These are twin buildings, each 425 feet long and 110 feet wide. They flank Bancroft Hall (Fig. 4) and are connected with it by colonnades.

Plate 15 is a view of the Boat House taken from the north. The buildings are entirely of granite; the contracts for them were let soon after the estimates were made, and their cost was within the amount allowed; they are, however, the only buildings of the entire

group which were not pared down to meet the advance in the cost of building, and to provide for the increasing requirements of the school, made necessary by the great increase in the number of midshipmen. The Armory contains class rooms and offices for the Department of Ordnance, and the Boat House similar accommodations for the Department of Seamanship. The drill hall in the Armory is 360 feet long by 100 feet wide; it has a balcony on all sides twelve feet wide, which is used as a sort of museum of ordnance. The interior walls of the building are faced with buff bricks. The interior of the Boat House has undergone an almost complete transformation since it was built; it having been converted into a Gymnasium. The Gymnasium as originally planned for 500 midshipmen was, of course, too small for 1,000. Rather than ask for sufficient money to make it large enough, the authorities decided to convert the greater part of the Boat House into a Gymnasium, and to place the boats in an inexpensive shed.

As originally designed, the Boat House on one side of the quarters, typifying the nautical side of the midshipmen's training, and the Armory on the other, typifying the military side of his training, seemed to me particularly appropriate, and I was sorry to see the building diverted from its original use, but it must be confessed that, transformed as it is, it makes a very fine and complete gymnasium. The principal hall is 100 feet wide by 200 feet long. The swimming pool is 76 feet long and 56 feet wide. The provision for lockers, team rooms, baths, etc., is most liberal, and the general equipment is in every respect what it ought to be.

The Department of Seamanship still occupies the end nearest the bay.

Mr. Flagg's article will be concluded in our next issue with the description and illustration of the Academic and Bancroft Hall groups.

Oldest Church Organ

FOUND ON ISLAND OF GOTHLAND, AND IN EXCELLENT STATE OF PRESERVATION

IN the Baltic Sea, forty miles from the mainland, lies the Swedish Island of Gothland, a mecca for students of early Gothic architecture. In Wisby alone, the chief town of the island, with its population of 8,000 souls, may be studied what remains of no less than ten churches, some of which date from the eleventh and twelfth centuries. The oldest of them is the Church of the Holy Ghost, completed about 1046.

Professor Hennerberg, director in a German Music School, and especially interested in the study of mediæval organs, visited fifty-nine churches in Gothland, and in a little village called Sundre came upon the remnant of what is unquestionably the oldest known organ in existence. The case alone has survived the fret of seven centuries, the holes for pedals and manuals are placed as in modern instruments, and inside one can see the chamber for the bellows and judge of their action; the exterior is adorned with paintings dating from about 1240.

When this ancient instrument could no longer serve its original purpose it was used as a sacristy, and for the safeguard of holy vessels and vestments was kept in careful repair, hence its excellent preservation to our day.—*Youth's Companion.*

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ILLUSTRATIONS:

New Buildings for the United States Naval Academy,
Annapolis, Md.—Part I. (12 pages and text cuts).

THE almost total lack of activity and the nearly equal lack of definite plan to meet the new traffic conditions which will inevitably develop in Manhattan when the new Brooklyn subways, the Hudson tunnels, the new East River bridges, the Belmont and Pennsylvania tunnels are completed and put in operation is quite incomprehensible. Of course the questions involved are intricate and important and require much thought and consideration, but they are not new, and the progress which has been made toward their solution, so far as the public is aware, is surprisingly small. A great deal has been suggested but very little actually accomplished toward making the streets and avenues conform to the new conditions which are almost upon us. The spectacle of bridges completed without approaches or any adequate means for utilization will hardly be creditable to the city, especially in view of the time that has elapsed since their construction was assured and their locations fixed.

IT would seem that the making over or adaptation, which must necessarily take place in many sections of the city in order to meet the new conditions, offers unusual opportunities for the development of much needed civic centers. If properly planned, civic centers located at points of congestion could not only be eventually beautified and made of great æsthetic value, but in the meantime would unquestionably add much to the comfort of the public. Their adoption would seem to go far toward precluding the possibility of such intolerable conditions of overcrowding as now exist in various sections where many lines of travel converge. The

desirability, almost necessity, of beautifying the city in every way possible consistent with the means at hand is generally conceded. Practically all the larger cities of this country and many of the smaller ones are giving much attention to æsthetic considerations, and unless we are content to occupy an unenviable place among them we would do well to make the most of our obvious opportunities.

THE means of communication between the various centers which will develop under the new conditions should in all probability be considered as properly a part of the problem of providing adequately for the crowds at the points of congestion. For unless quick and easy means of communication are afforded in the form of broad avenues, congestion will occur, be the scheme otherwise ever so well considered and advised. One of the boldest and perhaps nearest ideal plan is that which has been suggested in some quarters, of connecting the several points of congestion with broad diagonal streets or avenues. While this plan has much to recommend it in that, besides affording a direct means of communication between the main objective points in the city, it would increase materially the ratio of street area to improved or improvable property, thus reducing greatly the congestion on existing lines of travel, it is almost too ambitious and radical a scheme to allow much hope for its early realization.

UNDER present conditions with a depleted city treasury which cannot provide funds for even the most obvious necessities it would appear almost idle to advocate the very expensive plan of diagonal streets, and yet it has been often demonstrated that only by striving after the ideal has a moderately successful and satisfactory solution of a problem been achieved. But in any event it would appear high time that these problems which are of such great and lasting concern to New York should be given over into competent hands for consideration and comprehensive solution, even though it may require a decade or more for the final realization of an adequate plan, and that the Municipal Art Commission can render invaluable aid and should therefore be given broad power and authority in the matter is self evident.

THE truth of the old adage "History repeats itself" is well exemplified by the outcome of the recent Pittsburg High School competition, in which a number of prominent architects participated. Whether the plan devised and acted upon by the building committee and board of education, which resulted in the elimination of all architects who took part in the original competition, and the subsequent selection of a favored outside architect, will finally prove efficacious remains somewhat in doubt. There can be no doubt, however, as to the impression created upon the architectural profession and the public by the board's refusal to ratify the report and recommendation of its professional adviser, whose ability, judgment, probity and experience are beyond question. Whatever the outcome it may be said that the reputation of the board will scarcely be enhanced by its action in connection with this lamentable affair, nor can the popularity of competitions for public buildings be expected to increase greatly as a consequence of it.

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FIG. 10.—ENTRANCE PAVILION, CAMPUS FRONT, BANCROFT HALL.

New Buildings for The United States Naval Academy, Annapolis, Md.

By ERNEST FLAGG, ARCHITECT

PART II

THE ACADEMIC GROUP.

This consists of three semi-detached buildings built around three sides of a court which is open to the campus on the fourth side (see Fig. 11). It stands directly opposite Bancroft Hall at the other end of the campus and faces on a prolongation of Maryland Avenue at the head of which is the main entrance to the grounds. The principal walk through the campus will connect this group with Bancroft Hall. (See Fig. 2.) On the right side of the courtyard as one faces it is the Academic Building proper and on the other side a corresponding building of the same size and appearance for the Department of Physics and Chemistry. At the back of the court is the Library.

According to the original plans, the Department of Physics and Chemistry was to occupy a separate building nearer the entrance gate, but as it was necessary to finish Bancroft Hall before work on this group could be begun, a delay of several years occurred between the

making of the estimates and starting the work. In the meantime the requirements of the Department of Physics and Chemistry had grown on account of the increase in the size of the school, so that the building as originally planned for it was not large enough, and the cost of labor and material had at the same time advanced so much that the building as originally designed for the Academic departments and Library could not be built for the sum allotted to it. It was therefore determined to recast the whole plan of this group in a cheaper mould, and to combine the Physics and Chemistry Building with the Library and Academic Building. Brick was substituted for granite and the space allotted to the Library was greatly reduced. The alterations made necessary here in the original plans were perhaps the most disastrous of all those required to compensate for the rise in the cost of building and the increase in the size of the school. Fig. 11 shows this group as originally designed.

The courtyard, upon which the buildings face, was intended to be raised, to be approached by a broad flight of steps and to be ornamented by balustrades, pedestals for trophy guns, and other architectural features, but all this was abandoned to keep down the cost.

The Library building at the back of the courtyard (Plate 7) has two stories and a basement, the latter faced with granite, boldly rusticated. The main entrance is approached by a double run of steps. Above the first platform a marble tablet which was made when the Academy was first established at Annapolis has been set in the parapet. It bears an inscription stating that the naval school was founded under the administration of President Polk; George Bancroft being Secretary of the Navy.

The first story of the building is made of alternate courses of brick and granite without ornamentation, and is pierced by six large windows and the central doorway. The second floor contains the main reading room and the front is ornamented by coupled doric columns between the windows and by paneled piers at the cor-

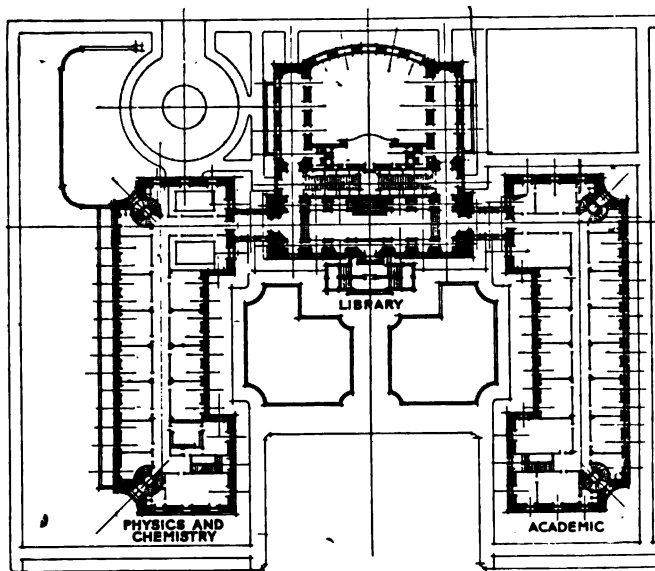


FIG. 11.—GROUND PLAN, ACADEMIC GROUP.

ners. Over the central window, which is larger and more elaborate in its treatment than the others, is a semicircular pediment sheltering two reclining marble figures, which rest on the archivolt of the window. Above the main cornice is a balustrade. At the corners of the piers are trophies composed of prows, etc. The pedestals above the coupled columns were intended to receive the statues of six admirals, but they were omitted for lack of funds. The clock tower stands about 30 feet back of the façade. It is 25 feet square by 140 feet high. The entrance vestibule is an apartment 135 feet long by 34 feet wide (Plate 10). It is finished in Caen stone, and the floor is of sandstone. It is divided into a central nave and aisles by piers which support the vaulting. The nave is covered by a barrel vault, which is penetrated at each bay by transverse intersecting vaults which cover the aisles. The floors of the aisles are raised by five steps above the general level, making platforms intended for the display of some of the objects of historic and technical interest which have been accumulating for years at the Academy. On the side opposite the windows are recesses for glass cases, which are to contain the cap-

tured flags. Other cases for these flags are to be provided for similar recesses at the sides of the grand staircase. All the flags which the United States has ever captured on the high seas are now at the Academy; when they are properly arranged in the cases they will form an exhibit of the greatest interest.

The grand staircase in two flights is beyond the trophy hall. Plate 8 shows one-half of it. The archway at the right is directly opposite the main entrance, and the monumental door on the left gives access to the stage of the auditorium. This door is intended for the use of the President or other distinguished visitors who may use the platform of the auditorium on special occasions. The large windows on the right open into the reading room of the Library. The stairway is lighted by circular skylights in the vaulting. The blocks at the sides of the steps are to serve as pedestals for objects of interest or beauty.

The books are disposed in cases around the main reading room, which is directly over the trophy hall, and in two lateral galleries or stock rooms. The reading room is 135 feet long and 34 feet wide. It is lighted by seven large windows. The walls above the bookcases are plain, but the ceiling is richly coffered.

Back of that part of the building in which are the reading room, trophy hall and stairway is the auditorium (see Fig. 11). It is 84 feet wide and 66 feet deep. The back wall is curved and is pierced by five large windows. The hall has a gallery, and the total seating capacity is about 1,000.

The Library is connected with the other two buildings which face the courtyard. The Academic Building, the one to the right, is almost wholly given up to classrooms and the offices of the heads of the departments. Its dimensions are 150 feet long and 85 feet wide.

The class rooms are generally twenty-five feet square, each room being lighted on one side by a very large window above the blackboard which extends around the room. The court side of this building is shown in Plate 9, and the river side in Plate 13. The basement walls are of granite and the rest of the walls of brick and granite. The roofs are of slate and copper. The Physics and Chemistry Building corresponds in size and outward appearance to the Academic Building, but the arrangement of the rooms is different. It contains a lecture hall having a seating capacity of about 600. Great care and study were bestowed on the planning and equipment of this building, and it is complete and commodious in both.

Directly back of the Academic group stands the Marine Engineering Building. This is in the form of a rectangle measuring 266 feet by 175 feet. It contains two enclosed courts, each 62 feet by 46 feet. There are two main floors and an upper story partly in the roof. The walls, like those of most of the other buildings, are of Naval Academy gray brick and granite. The cornice is of wrought iron, and the roof of copper. The building contains a great many fine shops and laboratories well equipped and perfectly lighted. The main entrance, shown in Plate 14, is directly opposite the northwesterly wall of the auditorium of the Library. On the other side of the building, but connected with it, stands the annex containing the foundry. This building is 125 feet wide and 71 feet deep.

BANCROFT HALL

The midshipmen's quarters, named in honor of George Bancroft, Secretary of the Navy, under whose administration the Naval Academy was founded, is the largest and most expensive of the new buildings. It stands at the southeasterly end of the Campus, which it separates from the Parade Ground. It is flanked on the northeast by the Gymnasium and Seamanship Building, and on the southwest by the Armory. It is connected with each of these buildings by colonnades. The extreme dimensions of the building are, length 733 feet, depth 458 feet. It is five stories high. The building is built around three courts, the center one of which is



FIG. 12.—INTERMEDIATE PAVILION, TERRACE FRONT, BANCROFT HALL.

open to the Campus. This court is 300 feet wide, and 183 feet deep. The other two courts are enclosed on all sides, and are each 100 feet square. At the centre of the water side of the building, a pavilion projects from the general mass. This pavilion is 167 feet wide by 200 feet deep. It contains the Recreation Hall below, and the Memorial Hall above. The building stands on a terrace 1,040 feet long by 75 feet deep. Owing to the topography of the land the terrace is low on the Campus side and high on the Parade Ground side. The main entrance is at the back of the great court on the campus side; it is approached by a monumental perron and a ramp en fer de cheval.

This building is entirely of granite. The basement and all the architectural details are of cut work, and the plain wall surfaces are of rock-faced ashlar. The main entrance doors are bronze, and the roofs are of slate and copper. Four very handsome French bronze cannons of seventeenth century workmanship are mounted on pedestals at either side of the perron. The arms of the Academy are over the central doorway, and trophies in granite surmount the flanking piers of the frontispiece. Tablets of Levanto marble are above the lesser doors (Plate 20). An idea of the terrace on the Campus side can be had from Fig. 13. The great courtyard referred to above lies between the two wings of the building which one sees in this picture. Fig. 14 is a view of one of these wings taken from a point on the wall of the basin below the terrace which on account of the grade is higher here than elsewhere on this front. The corner piers of the angle pavilions are ornamented above the cornice line by granite blocks in the form of capstans richly carved. A fountain occupies the corner of the terrace wall.

The three doorways of the main entrance above mentioned give access to the vestibule (Plate 24), the walls of which up to and including the cornice are of solid limestone. The vaulting is covered with plaster and was intended to be decorated in fresco. The floor is of marble. The central flight of stairs leads to the Memorial Hall, and two side flights, which do not show in the picture, lead to the Recreation Hall. These two rooms occupy the projecting pavilion on the water front of the building, which will be referred to later. Plates 21 and 22 are other views of the vestibule. At the left of the latter picture one can see the openings into the main corridors at the various story levels. These main corridors are sixteen feet wide and traverse the building longitudinally. At either end they abut upon the porticos connecting this building on one side with the Armory and on the other with the Gymnasium. Together they form a vista 1,247 feet in length. These main corridors are intersected by others which give access to the parts of the building which enclose the two smaller courts. The rooms are arranged in suites of three rooms and a bath; each suite intended for two midshipmen. Each boy has his own bedroom, and the bath and study are used in common. The studies are sixteen feet square and the bedrooms half that size. The baths are rain baths. I think I deserve the credit for their introduction, and for this feature, at least, the thanks of the midshipmen. I believe the baths are more prized by the young men than all the other improvements combined. I once asked a midshipman how he liked the baths. He said: "I have used mine seven times to-day." Annapolis is a hot place in summer, and the drills and other exercises of the midshipmen call for numerous changes of dress.

At the head of the steps in the vestibule a monumental doorway gives access to the principal room in the building, called the Memorial Hall. I hope the name will be changed to Alumni Hall. The annual dinners of the Alumni are held there, and it contains memorials to many departed members. Plate 25 is a picture of the central entrance doorway. Like the vestibule the walls of this room up to and including the cornice are of solid limestone. Plate 23 is a view of the interior of this hall. Its length is 158 feet, and its breadth is sixty feet. The vault is covered with plaster which was intended to be decorated in fresco. Plate 26

is a view taken in the Recreation Hall, which is directly below the Memorial Hall, and is of the same size. The walls of this room are also of solid limestone. The photograph shows one of the three principal entrance doors. This apartment was originally intended as the mess hall, but owing to the great increase in the number of midshipmen, it was not large enough. When the plans were made the number of midshipmen was about 300, and the building was designed to accommodate 500, but before it was finished the number had increased to 900. I advocated an increase in its size when it could easily have been made, but the authorities preferred to lodge men in the study rooms, and to place the mess hall under the terrace.

Plate 17 is a view of the pavilion, whose interior we

Ground. Fig. 12 shows one of the intermediate pavilions of the wings at either side of the Mess Hall Pavilion; one of them can be seen to the left in the last-mentioned photograph.

Bancroft Hall was built two or three years after the original estimates were made, and after there had been a very considerable rise in the cost of labor and material, and although it was necessary to greatly reduce the cost in order to keep within the estimate, it was not affected so injuriously as were some of the later buildings. If the contract could have been let when the estimates were first made, there is no doubt but that the whole plan could have been carried out as originally designed. Contracts for the boathouse, power house and Armory were made at that time with the sum allotted for



FIG. 13.—CADET QUARTERS, BANCROFT HALL, CAMPUS FRONT.

have just described, as seen from the terrace on the water side. The loggia is at the level of the Memorial Hall, and the large windows below it give light to the Recreation Hall. The kitchen is below the last mentioned apartment, and the mess hall occupies the space under the terrace. It is 380 feet long, and 73 feet wide, divided into three aisles by piers which support the vaulting, eighteen feet above the floor. At the left of the photograph can be seen the colonnade which connects Bancroft Hall to the Armory and which is symmetrical with the other colonnade connecting it with the Gymnasium. Plate 18 is a closer view of the colonnade as seen from the terrace. Fig. 13 was taken on the terrace looking toward the Armory. The present mess hall is under the terrace. Plate 19 shows the approach to this terrace from the level of the Parade

each, but every subsequent building had to be pared down to meet the increased cost of building.

In the case of Bancroft Hall, the main body of the building was reduced in width twenty-seven feet by the omission of central courts which were intended to furnish light for the corridors. The omission of these courts did not reduce the capacity of the building, but did affect injuriously the lighting of the interior and its appearance. If it had been built according to the original plan, there would have been a central longitudinal corridor on the main floor twenty-two feet wide, lighted from above, while the corridors on the upper floors would have received direct light from courts instead of borrowed light through the room, as at present. It was also necessary to abandon the granite dormers of the corner pavilions and substitute copper; also to omit the

crowning balustrade of granite. The architectural treatment of the corner pavilions was also modified farther to reduce the cost, but the necessary reduction was made without using brick instead of granite and otherwise reducing the quality of the materials and workmanship, as it was found necessary to do in the later buildings, after there had been a still further advance in the cost of construction. Fig. 4 shows the building as originally designed.

Fire Prevention

THE subject of fire prevention has claimed the attention of architects and builders at all times, but never to the extent that it has at present.

Mr. Evans' position in the mercantile world entitles him to a serious reading, and we recommend a careful perusal of his address.

He defines fire protection as the general term applied to the science of so constructing, protecting, and occupying buildings as to minimize the danger of fire, and in the narrower term, covering the mechanical aids employed to resist, discover, and fight fire.

When large figures are dealt with, it is difficult to convey a proper sense of proportion.

If we state that the annual fire loss of the United States, on a ten years' average for the years up to the end of 1902 (prior to the great Baltimore and San Francisco fires), was in excess of one hundred and forty-six millions of dollars, and up to the commencement of the present



FIG. 14.—PART OF NORTH WING AND TERRACE, BANCROFT HALL.

To safeguard life and property against the ravages of fire has been the study and great effort of every municipality. While perhaps there is some question as to whether the absolutely fireproof structure has yet been built, the ingenuity of modern inventors has accomplished so much in this direction that the question cannot long remain in dispute.

Mr. Powell Evans, of the Merchant & Evans Company, of Philadelphia, addressed a recent meeting of the National Association of Manufacturers, held in New York City, on the subject of fire protection, and we have received a pamphlet containing this address.

We have had much on this subject from the technical side, and this pamphlet is of especial interest, as it sets forth the matter from the viewpoint of a successful and practical man of affairs.

year was almost two hundred million dollars, we give no relative sense of this enormous destruction of property. To better understand these figures, and how they average with familiar items of our national expenditure, the following table will be of interest:

36%	U. S. Govt. Total Receipts.....	\$554,390,238
37%	Net Earnings Railways in U. S....	542,274,762
37%	U. S. Govt. Total Ordinary Expenditures	532,018,116
76%	Interest paid Railways in U. S....	261,044,569
78%	U. S. Internal Revenue Receipts...	253,400,164
79%	U. S. Customs.....	252,359,639
122%	Dividends paid Railways in U. S....	162,124,558
141%	U. S. Pensions.....	140,861,166
152%	U. S. Postoffice Receipts.....	130,201,926

156%	Commercial failures in U. S. (liabilities)	126,646,386
157%	U. S. War Department cost.....	126,465,728
165%	Fire Insurance loss payments.....	120,352,198
180%	U. S. Gold production (coining value).	
	U. S. Silver production.....	109,805,439
242%	U. S. Navy cost.....	81,871,647
648%	Interest on U. S. National Debt....	30,568,000

The total loss in 1907 was \$216,000,000, and in January, 1908, the worst record ever known was made in the fire loss sustained in the Central States and Canada, aggregating almost \$30,000,000.

The United States and Canadian fire loss for the first four months of 1908 was \$91,464,600, or at the annual rate of \$275,000,000 for both countries (the share of the United States being higher than for any like average previous period).

All these figures conclusively prove the constant increase in fire waste, but do not represent all the cost imposed upon the country from this cause. The cost of insurance is the measure of this amount.

About 630 stock and mutual fire insurance companies during 1907 wrote approximately 30,000,000,000 of risks for which they received \$301,038,893 cash premiums.

Not all the property burned in 1907 was insured. Nevertheless, the cash premiums received by these fire insurance companies during this year show an actual average cost to the people of the United States of \$1.40 for every \$1 of fire loss.

It is stated by fire insurance authorities that an average of 60 cents out of every \$1 of premium received is used to pay insured fire loss. With these figures as a basis, it will be possible, by reducing fire waste for the public, to save on an average *at once* all uninsured values now burned and *in time* 1 2/3 of all insured values now burned.

Mr. Evans states: "A comparison with other countries of like civilization will supply a fair test. In round figures the per capita fire loss in the United States during the past year has been \$3 as against \$0.33 in the principal European countries, including England, France, Germany and Italy—or *nine times more fire waste and interruption of business (which insurance cannot cover) in the United States than in Western Europe*. There are certain conditions in these countries that operate to effect a lower fire loss than would reasonably be possible here, viz.: the larger use of noncombustible materials, due to the high cost of wood, and better building codes in letter and practice; the lower height and smaller areas employed in their city construction; and, finally, the intangible influence of their older civilization, which makes these people more careful of small savings in all their affairs, and generally more cautious than we have yet become. Allowing duly for these fundamental differences between the countries compared, it is yet apparent that the nine times larger fire loss in the United States than the principal Western European countries suffer is outrageously and criminally greater than it should be; and this condition must arise largely from the ignorance and carelessness of this country's people. Ignorance, carelessness, or isolated self-interest, when they result in the tremendous sacrifice of life and property now habitually occurring among us from this one cause become nothing less than criminal. It has been argued by some that so far in our national development the total gain to national wealth, arising from per-

missible construction of buildings below the desirable standard of fire resistance (thus enabling men with limited capital to engage in business operations without undue expenditure on property) has been greater than if too restrictive building laws had been operative. There may have been some merit in this argument applied to times and conditions which have now passed, but should we not now unquestionably on the evidence begin to rigidly enforce in our cities a higher standard of fire resisting building construction? In many European cities a fire is held substantially a crime, and the owner of such property where it occurs, regardless of size, must report the facts to the authorities, and is charged for the use of the public service to extinguish it. Every consideration leads to the belief that this problem needs present attention; and it is incumbent upon our business men and great trade organizations, who represent certainly equal brain with any other class in this country, and a larger power and influence, to make themselves felt without delay in ameliorating this evil and unnecessary condition. Many of our business men now know more or less about this matter, and apply it in their own affairs; but, taking the population at large, there is great ignorance not only about the fact that fire waste is as bad as I have shown it, but that it can easily be rectified. The facts must first be widely advertised to arouse sufficient interest among individual citizens to induce them to study the subject, and as far as convenient and permissible to apply the knowledge primarily in their home affairs."

Publicity of the statistics bearing on this subject and the consequent education of the people to a realizing sense of its importance is, as Mr. Evans truthfully states, the only sure means toward the accomplishment of any real good.

While architects and builders are ordinarily alive to all these facts, it is difficult to impress their importance upon clients.

The cheapening in modern construction is largely responsible for much of this fire loss, and, while every municipality of importance may have its building code, or its local ordinances, they are often inadequate, and, probably, but partially enforced.

The Philadelphia *Ledger*, commenting on the recent Chelsea fire, sums up the situation as follows:

"When the country begins to realize that this fire loss is absolute; that insurance never makes good the national loss, which must be paid—every cent of it—out of the earnings and the product of the Nation, perhaps something will be done about it; but in the meantime the waste goes on. And the property that goes up in smoke is but a small part of the cost that is to be remembered. When the loss of human life, numbering 7,000 in a single year, the annual cost of fire protection in the form of apparatus and fire departments, the tax of insurance premiums and the cost of insurance administration, and the loss of business to individuals and to whole communities shall be computed, the aggregate price paid for the national indifference to fire waste becomes of appalling magnitude.

It is idle to attempt to fix the responsibility for this condition of affairs, for it is widely scattered, the national willingness to take chances being just as great a factor as the impatience for wealth, which places present economies before prudence and forethought. The insurance companies, in their eagerness to do business, are also to blame, and the lawmakers have never devoted themselves to the

problem. When they do, when a premium shall be placed upon better building methods, perhaps we shall then begin to act the part of rational, sensible beings.

Excavations at Babylon

THE report on the explorations at Babylon just issued by the German Oriental Society, under the editorship of Friedrich Delitzsch, is of considerable importance. It is now ten years since the expedition under Dr. Koldewey began work on the vast ruins which mark the site of the great Chaldean city. This was a herculean task, because the ruins covered so extensive a space of ground and were of such a complex character that hundreds of thousands of tons of debris had to be excavated. This learned society has, however, been admirably supported by the Imperial Government, and, although there have been no startling discoveries such as rewarded M. De Morgan at Susa in the Code of Khammerabi, or great finds of tablets such as the Americans made at Nippur, the results have been of no small moment. In the first place, the topography of the ancient city is now clearly ascertained; and of even greater importance are the new data which enable us to estimate accurately its size. The statements of Herodotus, who worked on hearsay evidence, and the somewhat wild theories of the late Dr. Jules Oppert, have held the field too long. The idea that Babylon was a city about six times as large as London, with walls a hundred feet thick and some fifty miles in circumference, must be given up. The true area is proved to be about three-quarters of a square mile. The ruins consist of three great groups of mounds. Babil in the north, a pile about ninety feet high, seems to have been a palace or fortress protecting that side of the city. In the middle of the space enclosed by the walls was the great Kasi mound, containing the palaces of Nabopolassar and Nebuchadnezzar; while south of these were the ruins of Amrau-Ibui-Abi, marking the site of the great temple of Bel. In their recent work of exploration the expedition has been greatly assisted by the building inscriptions of Nebuchadnezzar, especially the India House inscription, which is otherwise very monotonous reading, with its lists of temples, forts, gates, walls, etc., built by the mighty monarch. Guided by this record, Dr. Koldewey began to trace the great wall on the east side. It starts from the fort near Babil and runs for about two miles in a southeast direction. There were two walls on this eastern side, where attack was evidently most feared. In 1904 a large portion of these was uncovered. It was of brick about 25 feet thick, with bastions 29 feet wide and 64 feet apart on the outer side; these bastions protruded 12 feet from the wall, but those on the inner side were smaller. This was the rampart called Imgur Bel ("Bel has been merciful"). Dr. Delitzsch remarks that it is a strange coincidence that one of the towers of Jerusalem in the post-captivity period was called Chanan-El ("God hath been merciful"). Later a second wall was found behind the first, which, from inscribed cylinders of Assurbanipal, King of Assyria, was, we are told, named Nimitti-Bel ("Bel's station"). The wall turns to the west, and finally joins the great quay on the Euphrates bank. In the southeastern angle is the Kasr mound, and here Dr. Andrea discovered the two palaces joined by the great gate of Istar and divided by the Royal Road or Processional Street, a most important find. East of

the palaces this royal road ran between massive walls decorated with friezes of lions in yellow, white, or green enameled brickwork. The roadway was paved with buccia. The eastern gate was flanked by great towers, which were decorated with figures of bulls and dragons in monochrome relief on richly colored enamel. The Persian artists who decorated the palaces at Susa certainly copied from this elaborate work. Through this gate Cyrus, and later Darius and Alexander, entered Babylon. Two important temples have been discovered by the expedition, that of Mir-makt ("The Great Lady"), and that of Ninip ("The War-God"), which were absolutely devoid of decoration. Certainly the gold, precious stones, the cedar and bronze gates, with which Nebuchadnezzar says he decorated these fanes, have disappeared. There was found here an important cylinder inscription of Nabopolassar, in which he states that he "lifted the heavy yoke of the Assyrians and drove his foes from the land." Another interesting point is to be noted. It is now clearly proved that the Babylonian houses and public buildings had no second story; and, indeed, the walls of the private dwellings examined by the German expedition are so thin that they could not have supported a second story. There is much of the excavating work yet to be done, and it is to be hoped that next season will be devoted to the exploration of the temple Bel-Merodach, where, possibly, inscriptions of great value may be found.—*Glasgow Herald*.

Legal Notes

Freezing weather was pleaded as an excuse for not doing a workmanlike job on some houses in Iowa, but the Supreme Court of that state has recently ruled, 115 N. W. Rep. 1,106, that "if it were to be conceded that the season had something to do with the faulty foundation, the plaintiff undertook to erect the buildings at that particular season and do a first-class job. There was no provision in the contract whereby he was relieved from protecting his work or materials from the effects of freezing weather, and he cannot now claim that he should be released from liability because thereof. The evidence conclusively shows that buildings may be safely erected at any season of the year, if proper steps are taken to protect the material and construction work, and that such is the case is a matter of almost common knowledge." This decision shows the importance of making a distinct provision regarding operations during the winter, in contracts where the work is likely to be affected by very cold weather.—*Engineering Record*.

Architecture of the future

George Oakley Totten, of Washington, D. C., an American delegate to the International Congress of Architects at Vienna, delivered an interesting address, in the course of which, speaking on the development of skyscrapers as a result of conditions in the United States, he said: "Conditions are likely to arise which will greatly influence the architecture of the future. To sail through the air is no longer a mere picture of the imagination, and the day may not be far distant when the architect will have to devote his attention to beautifying not only the fronts of buildings but the roofs as well, so that they may not offend the eye of the esthetic traveler through the sky."—*N. Y. Times*.

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A remarkable decision regarding an architect's responsibility.—An explicit statement of services to be rendered by an architect and responsibilities assumed by him of importance in undertaking a commission.—Need of better understanding in this respect.—An architect's responsibility compared with that of a solicitor or surgeon.

ILLUSTRATIONS:

New Buildings for the United States Naval Academy,
Annapolis, Md. Part II. 12 pages.

WHAT would appear to be a remarkable decision has recently been rendered in England in the case of an architect against whom a suit at law was instituted on account of dry rot which had made its appearance in a building some years after its completion. The Court held the architect as strictly responsible, and damages were assessed accordingly. Apparently the position taken was that the architect had rendered defective service and it was in consequence of this defective service that dry rot had finally developed in the structure. While there is tolerably conclusive evidence to support the belief that the germs of dry rot often exist in lumber that to all external appearances is sound, and therefore the cause or responsibility for its ultimate decay by no means proven, even though the usual measures to insure ventilation are overlooked, it is not so much the finding upon insufficient or non-conclusive evidence (which is of common enough occurrence) that attracts attention, but rather the fact and also degree of liability which this decision imposes upon the architect.

A STATEMENT of services to be rendered by the architect, which has been widely used, and we believe generally approved by members of the profession, and seldom objected to by owners, recites that the architect assumes no responsibility, financial or otherwise; that he simply engages to act as adviser to, and agent for, the owner. This statement is ordinarily repeated in the specification for the work in hand, and would seem to be a just and reasonable provision. If it is at variance with the inalienable responsibilities of the architect's office and so impossible of enforcement the fact will be of unusual interest and concern to the profession. Architects are probably no more infallible than members of the legal or medical profession, and doubtless make many errors of judgment due, perhaps, to inexperience, or a misapprehension of the true conditions, or to some other cause, and not infrequently these errors prove costly to the owner; and possibly results would have been more gratifying in some instances if closer attention had been bestowed upon the work, although this again is a mere matter of opinion or judgment.

BUT the solicitor's fee must ordinarily be paid even though he loses the case he has previously advised his client can be defended successfully, and also notwithstanding the fact that the client feels a much better defense might have been made. How often do we hear of a client bringing suit against a solicitor for a faulty brief or a defective presentation of his case? Similarly the surgeon is scarcely expected to remit his charge for services if the operation performed is not as successful as was expected. Nor would justice seem to require that he reimburse his patient if he failed to recover from an operation in less than twelve weeks when the usual time required was but ten. In fact, if the patient were to die and it subsequently developed that an inaccurate diagnosis had been made, it is doubtful if the estate of the deceased would have any recourse, unless a palpable case of malpractice could be shown.

OF course the services rendered by an architect are quite different from those rendered by a solicitor or a surgeon, but they are all in the nature of advice, presumably based upon technical or scientific knowledge of the requirements in each case, and they all include a certain amount of direction as to the proper carrying out of the advice. In the case of the architect the advice is concretely expressed or illustrated in the form of plans and specifications, and the direction takes the form of superintendence, but why he should be held financially liable for the accuracy of his advice, and the precision of his direction, while the others, as a matter of common observation, are not, is difficult of comprehension. Possibly the fault is in the enforcement of the law in the case of the other professions, but if the degree of responsibility indicated by the decision in the English case referred to above actually exists, it would seem that the architect was classed with the contractor and tradesman who by general custom are required to guarantee their products. An explicit and authoritative statement on this subject, defining exactly where the architect's liability ends under normal conditions of employment, and to what extent and in what manner this liability may be shifted or varied, would be of inestimable value to the profession.

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No. 1699.



HONINGTON HALL, WARWICKSHIRE, ATTRIBUTED TO INIGO JONES.

Domestic Work of the Renaissance in England

An Address by Henry Tanner, Jr., F.R.I.B.A. Illustrated with Sketches and Photographs by the Author.

PART III

WREN was born in 1632, and as a young man was recognized as a genius at mathematics and classics before he took up architecture; he was the author of many ingenious, if, as appears to have been the case, useless inventions (Fig. 12). His early work about the age of thirty was at Oxford, and included the Sheldonian Theater and the Ashmolean, but they compare very unfavorably with his maturer style as shown at Trinity College. The great work of Wren's life was St. Paul's. Although so busily engaged, he found time for a considerable amount of domestic work, a good deal being in the Temple, with its beautifully proportioned entrance in Fleet street, of excellent gauged brickwork and Portland stone in the base, and order above. His front to Christ's Hospital (Fig. 13), another good example of the gauged

brickwork of the time, and which has only recently disappeared, was on very similar lines to the last-mentioned work, with a base, and order over, two side wings with straight pediments, and a large center curved one, almost entirely constructed in brick. He designed the library at Trinity, Cambridge, one of the best buildings in that city of fine architecture, and Robert Grumbold, who worked under him, was about this time employed in himself designing and building the river front of Clare College and the bridge. Winchester and Hampton Court Palaces were his next works, the one now a barracks, and the other the magnificent building we still have much as he left it, and though only a portion of the design, as originally intended, is quite enough, with its splendid façade, court, and vistas, to show us what this remarkable

man was capable of producing. Wren used here his favorite materials, red brick and Portland stone, the center feature of the façade, with its fine carving and iron-work, being all stone, but the court which we all know

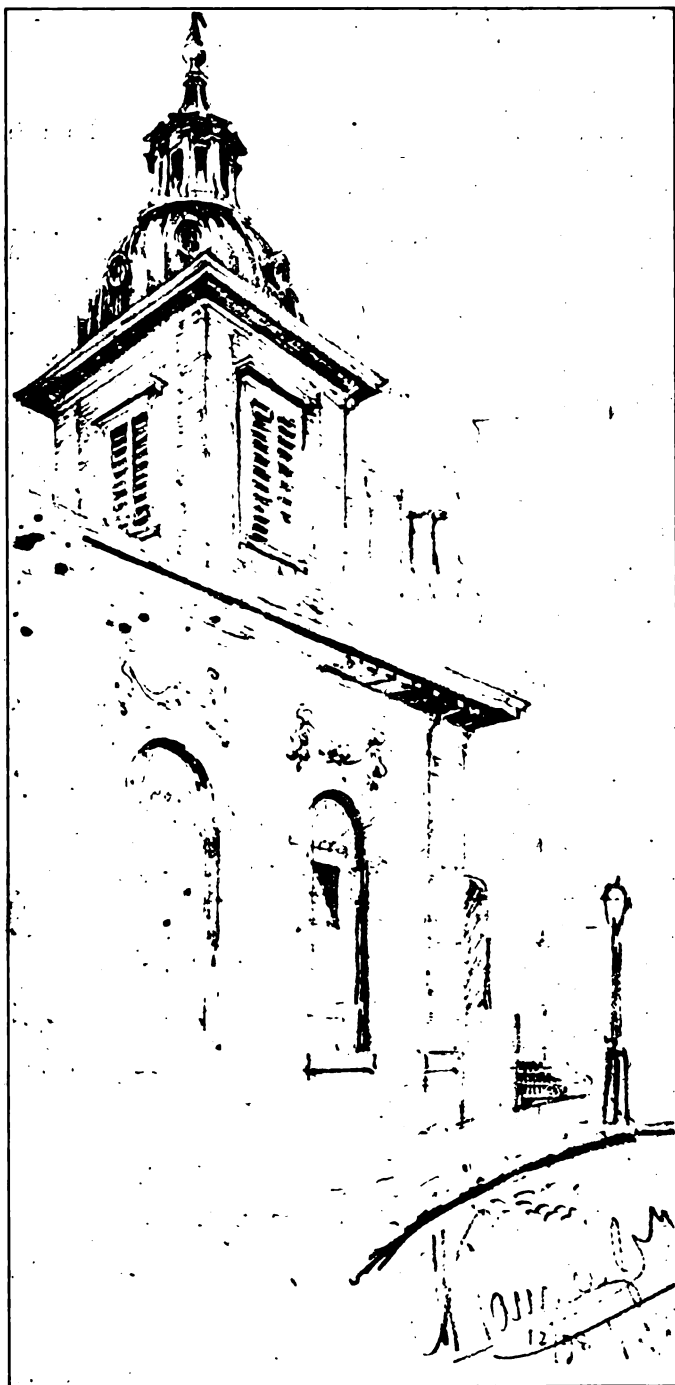


FIG. 12.

so well and admire is simpler in treatment, but none the less most effective, with the open arcade, brick piers, and large windows. The interior decoration and detail at Hampton Court are very fine, and show the work of the best school of craftsmen that ever existed in this country—Grinling Gibbons, Cibber, and Jean Tijou, who all helped to make this building the treasure-house that it is. The many varieties of fireplaces are very interesting, and the woodwork generally, with the graceful carving in pear and limewood, is of a quite exceptional standard; that in the King's bedchamber is a typical example. Wren did a good deal of work at Kensington

Palace, very quiet and dignified and almost without ornament and mostly of red brick, and at Groombridge, near Tunbridge Wells, brick is used nearly throughout and with an effect which it would be hard to beat, whatever materials were used.

One of the finest public buildings in England is Greenwich Hospital (Fig. 14), and although not started by Wren, the general conception is his, being designed to bring into the scheme the two blocks already there, the Queen's House completed, the other, King Charles's block, half finished. The former he brought into the design at the end of the vista from the river, across the great forecourt between the colonnades with the two domes to the hall and the chapel which group so well with the general composition. With this brief sketch of Wren's works we must pass on to that of his successors, the most prominent being Nicolas Hawksmoor, who was associated with him at Greenwich, and Vanbrugh, who carried the grand manner in architecture to such an extreme that finally size alone seemed to be his object in design. His ideas were fine, but he approached his subject more from a pictorial than an architectural standpoint, for which very reason his buildings could never be of the highest class; the plans of Castle Howard and Blenheim we have already considered, and these two buildings bear out most distinctly my remarks above made, that the comforts of the inhabitants, the shape and lighting of the rooms, and the service generally were quite a secondary consideration to the general effect. Hawksmoor, who studied both under Wren and Vanbrugh, was the architect of a good many churches in London and some work at Oxford, including the Clarendon building, with its large order, evidently inspired by Vanbrugh, and one of his most successful buildings.



FIG. 12A—TRINITY COLLEGE.

Gibbs was also one of Wren's followers, practising between his time and that of the amateurs of the eighteenth century, and we know him chiefly by his church work; but he also executed a good deal of Oxford and Cam-

bridge, the Radcliffe at the one and the Senate House at the other being his chief works. During the eighteenth century and after the disappearance of Wren's school, of whom Gibbs was the last, there were two groups of architects at work in England, the amateurs, such as Lord Burlington, Campbell, Dean Aldridge, and Kent, and their supporters. On the other hand, architects like the Woods of Bath and Carr of York. Wood did a great deal of work in Bath, both in separate buildings and laying out terraces and streets, and was particularly successful in the latter, and his best isolated work is Prior Park, a good design and one that gains much from its position, with the great stairs and terraces in front.

Spencer House, by Vardy, and the houses on the north side of Cavendish square are works of this period, and without going further to the time of the brothers Adam and Sir William Chambers, we may quite well leave it, as tracing the style up to its zenith is so full of charm that the study of the decline is comparatively uninteresting, though, of course, much good work was still executed.

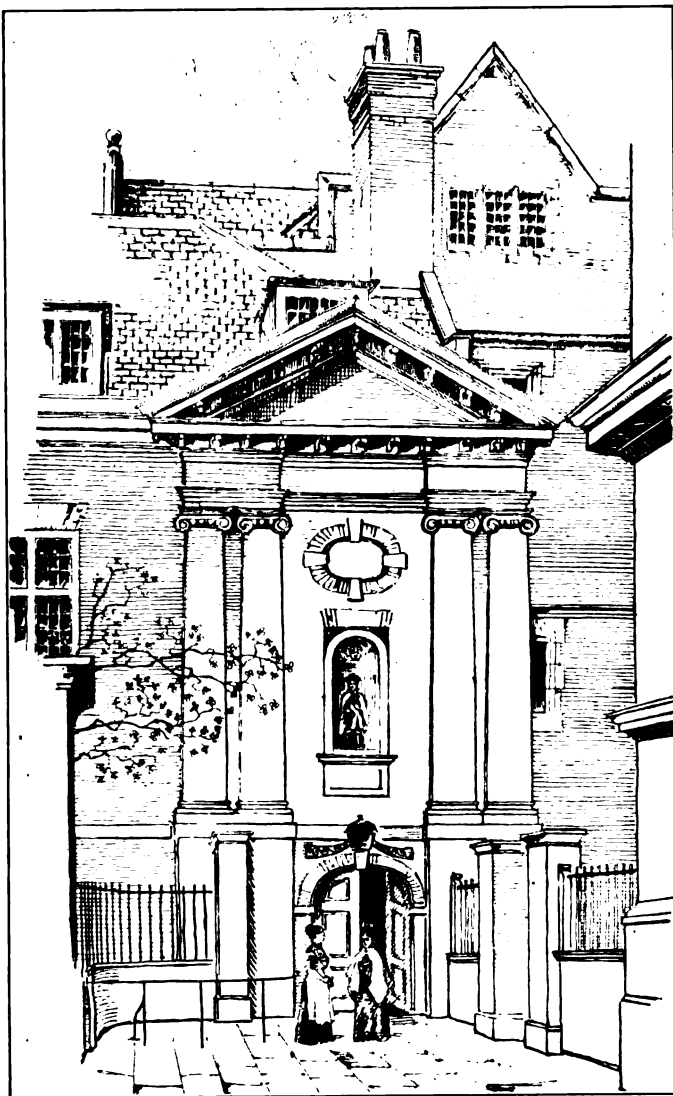


FIG. 13—CHRIST'S HOSPITAL.

From the above outline you will see the various stages through which we have passed in our architectural development, up to the time when, in its greatness, architecture was looked upon by all educated people as an art to be studied, and was supported by kings, down to

the time when copyism and lifelessness had dragged it down to such a degree that the practice of Renaissance work ceased to exist, and after a period, about the beginning of the last century, when architecture generally



FIG. 14—GREENWICH HOSPITAL.

was non-existent, the study of Gothic was revived, but this failing to satisfy, we again have the present wave of Renaissance carrying all before it, and with the many beautiful examples for study and the increased opportunities for education and travel, is it too much to expect that we may, after this lapse of time, be again entering on a period worthy to follow Jones and Wren?

Metropolitan Tower Bells

FOUR of the largest and costliest bells in the world are to be placed in the forty-sixth story of the new tower of the Metropolitan Life Insurance Company's building, in Madison Square, and from a position about 650 feet above the pavement, nearly twice as high as any in the world, their deep tones will announce each quarter of an hour.

The largest bell, toned to B flat, will be 70 inches at the mouth and weigh 7,000 pounds; the second in E flat, will weigh 3,000 pounds; the third in F natural, will weigh 2,000 pounds, and the fourth in G, will weigh 1,500 pounds. They will play every fifteen minutes and strike each hour. They are to be mounted on pedestals between the marble pillars outside the forty-sixth story.—*New York Times*.

The Signing of Buildings

THE question involving the advisability of architects signing their completed work has been under consideration by the profession for a number of years, and was the subject of a special report rendered by a regular committee at the forty-first annual convention of the American Institute of Architects. This report which favored the practice has apparently greatly increased the interest in the question, and desirous of obtaining as general an expression as possible THE AMERICAN ARCHITECT sometime since addressed letters to the presidents of State Chapters, as well as to other prominent architects throughout the country. A great many replies have been received, and while it is impracticable to reproduce them all, by permission of the writers we print below a number which seem to fairly express the general sentiment of the profession.

Mr. Frank C. Baldwin, of Messrs. Stratton & Baldwin, Detroit, Mich., writes:

I am unqualifiedly in favor of the idea that the architect's name should be permanently attached to every building of interest which he erects. For some years Mr. Stratton and I have been carrying this idea into practice in connection with everything of a public or monumental nature which we have done, such as churches, bridges, etc.

We built a storage warehouse and inserted our names in the brickwork. The bricks bearing our names were made especially for this purpose, and are a little longer than the other bricks, which are of standard size. The names were put in a very inconspicuous place in a very large blank wall surface.

I think it is the duty of every architect to endeavor to perpetuate his name in this manner, as, too frequently, records are lost and it is impossible to learn the originator of a building which may be only a half-century old.

FRANK C. BALDWIN.

Messrs. Carrere & Hastings, New York, N. Y.

We concur entirely with the action taken by the American Institute of Architects at its last meeting. We would further state that quite a number of our buildings have been so signed, and usually by request of the client—not only in the case of public or semi-public buildings, but even in the case of residences.

CARRÈRE & HASTINGS.

Mr. George Cary, Buffalo, N. Y.

As all architects will admit themselves, that they do not always do works of merit or art, I feel that the buildings that should be signed or have the architects' names chiseled in stone, marble or granite should be those only selected by a special committee and endorsed by the local chapter of each community.

In this way the modest architects as well as the forward ones would receive any honor which is their due from their fellow practitioners, and the public would then recognize the endorsement of a work of merit.

GEORGE CARY.

Messrs. Cope & Stewardson, Philadelphia, Pa.

We have yours of recent date, asking us for an expression of opinion on the wisdom of an architect signing important buildings by having his name cut or placed upon the actual building.

The practice is one which we rejoice to see carried out when the method adopted is in the proper spirit and the result is simply to inform the interested who the designer is. Conspicuous advertising of the architect's name we consider most obnoxious, and this we fear is very likely to be the result in many cases if the issue be forced and a campaign for signing buildings be generally inaugurated. We believe in advocating the practice in a quiet way, and allowing it gradually to come into vogue, and see no reason to worry if it take a generation to do so.

COPE & STEWARDSON.

Mr. Ernest Flagg, New York, N. Y.

I would say I am heartily in favor of it. I think it ought to be done in all cases except where the architect is ashamed of his work.

If a building is a work of art, I do not see why it should not be signed by the artist, just as any other work of art is signed. I have done it myself in a number of instances, and I hope it may soon become a universal practice. I see no possible harm that could arise from it, and much good. It would add to the interest of the building and benefit the owner and the architect alike.

ERNEST FLAGG.

Mr. J. B. Noel Wyatt, of Messrs. Wyatt & Nolting, Baltimore, Md.

I distinctly approve, on general principles, of having the names of the architects attached, in some form, to the buildings erected from their designs, on the same principle that creations of other artists, painters, sculptors and musicians attain great interest and value from the signatures being attached, both from the point of view of the knowledge coming to the public, both contemporary and in the future, as to the authorship of such works, and also information in regard to the authors themselves, that so frequently comes up in an historical way in connection with other lines of work, scientific, artistic or social, with which men may have had more or less direct or indirect connection.

I do not think, however, that it is necessary or desirable that all the works of an architect, of every description, should have his name attached, but only such as may be presumably considered of more or less importance, either as monumental works of art in themselves, or likely to be of importance and prominence in a community. The distinction between the greater and lesser important works could not probably be categorically designated, but would have to be left to the intelligence, judgment and taste of the designers, and I also think it very desirable that the form of such signature should be made in some way quite distinct and differentiated from those of contractors and building committees that may have had more or less connection with the progress of the work.

J. B. NOEL WYATT.

Mr. D. H. Perkins, Architect to the Board of Education, Chicago, Ill.

It is my opinion that fully one-half of the buildings which are erected are not exceptional or remarkable, and, therefore, shed no particular credit upon their authors. It is a kindness to them to keep their names off.

Rather than have the mistake of a general application of architects' names on all of the buildings designed by them, I should go to the other extreme and omit them entirely from all buildings.

I think that a decision in such matters should be taken away from the owners and the architects, and, instead, the matter should be referred to some disinterested body—a Municipal Art Commission, for instance. I think that some such body could annually designate architectural monuments upon which their author's name should be inscribed, and that they should then be made a matter of public recognition and ceremony. Unless some such method is adopted, it is my opinion that the indiscriminate custom of placing architects' names on buildings will lose its significance and value.

D. H. PERKINS.

Mr. Hugh Roberts, Jersey City, N. J.

The inquiry which you make concerning my opinion as to the propriety of architects signing their names to buildings is one that has been discussed upon many occasions, and was the subject of a report read at the last convention of the Institute by a regular committee appointed by the Institute. This report expresses my opinion exactly, and I do not think I could add anything to it.

However, I might add that I think it will be a long time be-

fore I shall adopt the practice myself, but there is no professional reason why it should not be adopted by anyone who desires to do so.

HUGH ROBERTS.

Mr. Robert S. Roeschlaub, Denver, Colo.

Although I have never signed a building, I would not be adverse to the establishment of such a custom. I have always urged contractors to attach their names to the work they have executed, my object being to urge them to produce work of which they would not be ashamed.

If not ostentatiously displayed, I see no reason why an architect should not be honored, or otherwise, by such custom, according to the character of his creation. The architect is sometimes the victim of an opinionated client and compelled to act contrary to his judgment. In such a case his refusal to allow his name to be placed upon the building would be some incentive towards better building on the part of the owners.

Such a custom, established and properly used, would, in my opinion, redound to the credit of the building as well as the architect.

ROBERT S. ROESCHLAUB.

Mr. Edward W. Donn, Jr., of Messrs. Wood, Donn & Deming, Washington, D. C.

I am heartily in favor of architects signing their work. In fact, I think that if they were compelled to do so there would be less of this pot boiler work than there is now. The public is becoming more and more observant as the years go on, and it is a matter of general interest to it to know who is responsible for the good and the bad as well.

In a great many instances architects are selected by clients because their work is pleasing. If a work is good, its author should be known to the public. Surely this architect should have the same right as the artist or the sculptor.

In the case of the Union Trust Building in Washington, D. C., which was designed by us (Wood, Donn & Deming), request was made of the president of the company to have our name placed on the building. He demurred, stating that he thought the request unusual, but would consider it and bring it before his board of directors. We told him we were proud of the work. He said he was proud of it also. We said the public is interested in knowing whose work it is, not only at this time, but in the future. Besides being a legitimate advertisement for both parties. The board met and unanimously decided that it was entirely proper that its creators should be recognized by having their names suitably inscribed in the granite, for the information of this and future generations.

Here in Washington it is generally regretted that the authors of such buildings as the Capitol, Treasury, Interior, White House and other notable buildings are, in a majority of cases, unknown to the general public. It would be a source of great satisfaction generally if their names were placed where those interested might read.

It gave me great pleasure, several years ago, to discover in a beautiful little church in Dorchester, Mass., the names of the architects, Cram & Goodhue, suitably placed in a small memorial window.

Yes, most certainly do I approve of architects signing their work—in fact, I would compel them to do so.

EDWARD W. DONN, JR.

John Graham, Seattle, Washington.

Replying to your letter regarding the subject of architects having their names attached to buildings erected from their plans, I am entirely in favor of that custom being inaugurated, and think it would be universally followed if the example were set by one or two of the leading firms.

If our profession is an art, we have the example of literature, music, painting and sculpture, in all of which the personality of the author lends interest to the subject—usually the first act of any visitor to an exhibition of painting or sculpture is to purchase a catalogue—if a business, we should remember that in every other business the absence of the maker's name is a reason for suspicion.

Consider the added interest, architecturally, of a visit to New York if this custom had been followed.

JOHN GRAHAM.

Thornton Fitzhugh, Los Angeles, Cal.

You wish my opinion of the propriety of "signing" buildings with the architect's name.

Though I have never felt this to be a "burning question," I think every man entitled to credit for his deeds, good or bad.

"Ethics" I consider a misnomer when applied to a matter which, like this one, involves no question of honorable practice, or high or low thinking.

As the practice has gone up to the present time, I should prefer to be classed with the non-signers.

THORNTON FITZHUGH.

Although it will be seen from the foregoing that there is not entire unanimity on the subject, it can hardly be said that any very cogent reasons have been advanced in opposition to the practice, either in the correspondence which has reached us, or as far as we have noted, in the press. The objection which has so often been suggested, that under this plan the architect would in a great many instances receive credit which in reality is due to his draughtsman, is of course founded on the obviously erroneous assumption that the terms "Architect" and "Draughtsman" are synonymous. While there is no disposition to underestimate the talent and ability of the draughtsman or belittle his important function in the architect's office, it is difficult to understand the notion which seems to be prevalent in some quarters that all the other difficult, exacting and multifarious services which are performed by the modern architect, all requiring experience and ability of a high order, and all absolutely essential to success, are of no importance; the draughtsman who "designed" (ordinarily under strict and explicit directions, often accompanied by a sketch or "inspiration" photographs, and always subject to the criticism and approval of the architect) the façade alone being entitled to credit.

Another obstacle or objection which it would seem might not be considered insuperable under average conditions, is in effect that while the artist or sculptor ordinarily is original owner of his works and has, therefore, a perfect right to sign them before offering them for sale, the architect's work is generally produced for, and the property of, someone else. Of course the owner would be within his rights in refusing an architect permission to attach his name to a building, and under present conditions, with the rather infrequent adoption of the practice, such instances would probably occur, but if the practice became general, amounting to a custom, especially if mention were made of it when a commission was undertaken, it would seem that cases of serious objection on the part of owners would be rare.

The advisability of signing all buildings or only those that are of especial merit or interest, is a point upon which some difference of opinion is apparent; and this phase of the question is still further complicated by the obvious difficulty in satisfactorily determining the worthy structures, in case it was decided that only the better buildings should be signed. The suggestion that possibly this could be best accomplished by the appointment of a commission from which permission must be had before an architect might properly sign a building, is perhaps worthy of consideration, but there is little doubt that further thought and discussion will be an advantage before definite action is taken looking toward the adoption of a plan which will embody the general idea in its most desirable and beneficial form.

Communication

By Mr. Franklin B. Ware, New York State Architect, Addressed to the Board of Award, New Sing Sing Prison Competition

GENTLEMEN:

The action taken by the Board of Award at its meeting June 12, 1908, in selecting by a majority vote plans numbers 28, 30 and 20 in the order named for first, second and third place, the said action having been certified to me by Mr. George McLaughlin, secretary, June 13, 1908, has been given very careful consideration. I have also read with much interest the reasons, as stated in the minutes, given by each member of the Board explaining his vote. I am not convinced, however, that plan No. 28 is the best one submitted in this competition, my objections to it being as follows:

I think that a radical mistake has been made in dividing the prison yard in half by a group of buildings connected by corridors, making access and communication from one side of the prison enclosure to the other impossible except by crossing corridors or passing through buildings. This arrangement of buildings and corridors provides innumerable nooks and corners suitable for hiding places, and this arrangement will require constant supervision.

The two main shops are located at opposite ends of the prison yard, about 1,200 feet apart. This would seem to me objectionable.

As to the detail arrangement of buildings, the plans of the general hospital are not good, the two-story bath, laundry and wash-house is undesirable, and I think the use of enameled steel cells will be found impracticable, even though the cost be not prohibitive—which I doubt very much.

While generally the arrangement of buildings is satisfactory, exception must be taken to the main shops with their major axes east and west. This arrangement prevents them from receiving sunlight on the long sides, and this I consider objectionable.

The future extension of the cell block is one of the weak points in this plan. The competitor, probably realizing this, proposed three methods, none of them capable of being satisfactorily made without radically altering the plan. The proposed extension north and south, if made, would necessitate the tearing down of the prison walls at two points and when completed a deep recess or pocket will have been created in the prison yard. The second method proposed, *i. e.*, extension on the east and west axis, is out of the question on account of its orientation. We might as well consider "radial cell block" plans as to consider this method of extension. The third method, *viz.*: by building separate cell blocks back of the present cell block, is the best of three methods proposed; but, as before stated, the prison yard is already cut in half by the group of buildings on the center axis and to further cut it up by building cell blocks in the only open space left would be unwise.

As to whether the design of the buildings is appropriate for the purpose or not, is a matter of opinion and taste. The style of architecture selected for the administration building, warden's residence and recreation quarters (buildings which will be seen by the public passing up and down the river) does not appeal to me as

being appropriate. There is no reason why this Board, in selecting an architect, should not give this matter consideration so that the prison, when completed, will be a model not only from a prison standpoint but from an architectural standpoint as well. We can only gauge the competitor's ability in this respect by carefully considering what his ideas are as to the proper style of architecture to be used, and in this respect competitor No. 28 fails to meet the requirements.

To a certain extent, I do not criticize competitor No. 28 for his excess in cost over two million dollars because this is a common fault with all competitors and the responsibility for this condition of affairs will rest with those who drew up the conditions of the competition, requiring buildings and plant that could not be executed for the money available. I do, however, criticize this competitor for the way he has made his estimates of cost, using methods of figuring the cubic contents of buildings which do not give accurate results and which are misleading, thus forcing the figures so that the apparent cost would come within eighty-eight dollars of the two millions available.

My preference for first choice is plan No. 30, and, briefly stated, my reasons are as follows:

The arrangement of buildings around a large open court provides ample sunlight, free circulation of air and good ventilation, which are so necessary. The yard is not cut up by buildings and corridors as in the case of No. 28. The architecture of the buildings throughout and particularly of the walls and buildings to be seen from the river is most appropriate and in keeping with the character of the institution. The material proposed for the building, *viz.*: native stone, can be quarried on the site by prison labor, and no better building material can be found. I admit that in some of the details of the buildings this competitor does not appear to be as familiar with prison requirements as does competitor No. 28. On the other hand, the design submitted by competitor No. 30 indicates that he is much better qualified architecturally than competitor No. 28 to design a prison which will be a credit to the Board and the State of New York. If I were the sole judge of the competition, I would not hesitate to award first place to plan No. 30.

The Board of Award is composed of seven members, five of whom have selected No. 28 as their first choice. These five men are all more familiar with the requirements of a prison and therefore better qualified than I am to say which of the plans submitted meets the requirements from a prison standpoint. The original law governing this competition did not contemplate that the State Architect should have more than one vote. According to the amendment passed last winter, his concurrence is necessary before an award can be made. I should consider the proper use of the power of non-concurrence (amounting to a veto) as applying to a condition that might arise if a poor plan had been selected by the Board as its first choice. I cannot say that such is the case, although I do not think plan No. 28 is the

best one that the Board could have selected, and it would be with a great deal of reluctance were I to concur with the findings of the Board in placing plan No. 28 first.

Such an award would be subject to serious criticism, which the majority of the Board must be prepared to meet. I feel confident that the criticisms I have made will be sustained by others. Appointed a member of the Board of Award on account of my official position as State Architect, with practically a veto power which I do not feel justified in using, and having at heart the best interests of the State, I earnestly beg the Board to reconsider its former action.

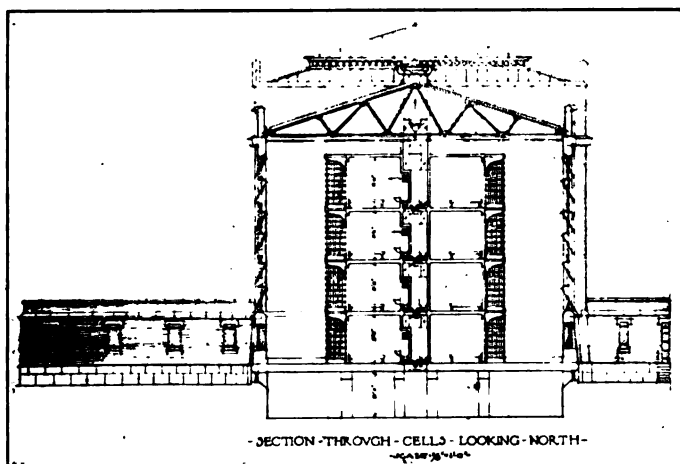
Respectfully submitted,
FRANKLIN B. WARE,
State Architect.

Illustrations

Through the courtesy of Mr. Franklin B. Ware, New York State Architect, we are enabled in this issue to present to the readers of *THE AMERICAN ARCHITECT* the prize winning designs in the competition recently held for the new prison plant to be erected near Peekskill, on the banks of the Hudson River.

As there has been much comment in not only the architectural press but in the daily papers as well, and as the competition has been freely criticised by the various architectural bodies throughout the State, we feel sure these plans will be studied with much interest.

The Board of Award certified the result of their judgment, as follows: First, No. 28, W. J. Beardsley, Poughkeepsie; second, No. 30, Warren & Wetmore, New York; third, No. 20, Herts & Tallant, New York.



DESIGN NO. 33, MR. KENNETH M. MURCHISON AND ASSOCIATE ARCHITECTS.

The site of the proposed new prison is on a high plateau, and presents unusual possibilities for an architectural landmark that would command attention, not only when approached by water but from the Western shores of the Hudson as well.

In addition to the main prize winning designs, we have included that of Mr. Kenneth M. Murchison, architect with Lord & Hewlett; Benjamin Wistar Morris, Ewing & Chappell, Edward F. Hinkle and Mills & Greenleaf, associate architects.

This interesting collaboration we believe will be found a most valuable contribution to the competition and a solution of the problem that deserves attention. While the program required an unusual number of drawings

from each competitor, lack of space compels us to limit the presentation to a few of the more important drawings in each case.

Let's Get to Business

THE *Manufacturers' Record*, commenting editorially on the business outlook, takes occasion under the above title to urge its readers to avail themselves of present conditions, and not to put off projected matters. The *Record* says, in part:

"The country is safe, and with this assured all fear and doubt should be dispelled, and every business man should immediately prepare for increased business activity. There is no reason to look with fear or timidity to the future. The wave of radical agitation against business is dying out, and men everywhere are coming to recognize the fatal blunder which has been made. Under these conditions, the farseeing man should go to work.

"He who proposes to build, whether it be a barn, a dwelling, a factory or a skyscraper, should see that now is his opportunity. Materials are cheaper than for several years, labor is more abundant, contractors everywhere are looking for work, and a great saving can be effected by doing work now which must be done in the near future.

"Higher prices are inevitable just as soon as business begins to revive. With a return even of a fair degree of activity, and this is already in sight, building materials must advance, labor will command higher wages, railroads will be so blocked with freight that delays and congestion of traffic will be inevitable.

"Now, when lack of freight enables the railroads to make prompt deliveries, when contractors and laborers are hunting for work, when lumber, and bricks, and cement, and iron, and steel are cheaper than they have been for years, and much cheaper than they are likely to be in the near future, every man who fails to utilize the present opportunity to carry out improvement operations which he has in mind will make a great mistake. Many men are so constituted that in times of dullness they are afraid to prepare for times of activity. They wait until the boom is on, and then they undertake to re-equip their mill with new machinery, to build a new plant or construct a house, and the result is long delay, high cost of construction and the disadvantages of failing to secure the benefit of the rising market for their output. The wise man will make the most of the present opportunity. Get to work. Business interests are safe. Let us get busy."

Monument to the Prison Ship Martyrs

The last work, it is stated, of the late Stanford White was the monument erected in Fort Greene Park, Brooklyn, to the memory of the prison ship martyrs.

This monument is a huge fluted shaft of Newport white granite resting on a base of concrete 34 feet square, set on a platform 223 feet square. The column is 150 feet high, and is surmounted with a bronze urn 28 feet high. The shaft is 18 feet in diameter at the base.

The monument is the result of twenty-five years of effort on the part of the Prison Ship Martyrs' Association of the United States. The Gothic monument at the northeast corner of Trinity churchyard marks the spot of their burial.

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WHILE the result of the recent competition held for the purpose of securing plans and selecting an architect for a prison plant to be erected in this State is scarcely a surprise to architects and others who have followed the matter closely, there were, we believe, those who cherished a lingering hope that the grossly unreasonable and ridiculous provisions of the program were more a result of ignorance or inadvertence than of design, in the first instance, and of stubbornness and contumacy after they had been pointed out and objected to by architects and architectural organizations. Any such charitable view of the matter has, however, become difficult of maintenance, for, contrary to general expectation, founded, at least partially, upon public utterances and representations of the various architectural organizations following the issuance of the program, a number of meritorious plans by prominent architects were found among those submitted. The test thus unexpectedly presented to the Commission was intensified by the eminently fair and unquestionably correct report of the State Architect disapproving the Commission's selection. In reaffirming its findings in the face of this report a great amount of doubt in the matter has been dispelled and the Commission's position has become unenviable.

TO say the winning plans gave evidence of a technical knowledge, on the part of their author, of the machinery and workings of a prison, which was invaluable and indispensable, and which was lacking in the other plans, is utterly puerile. If this quality exists in the selected design it is not in any way

comparable in importance with those of excellence of plan and adequate general architectural treatment; and in these matters it is obvious that to disregard the recommendations of the State Architect, whose training and experience qualified, and whose office entitled and required to advise, was neither proper nor justifiable. There would seem to be little doubt but that a sufficient familiarity with the technical requirements of a prison to meet the necessities of the case could be quickly acquired by the author of an otherwise commendable, and architecturally adequate scheme, and could be readily applied without serious modification of plan. But a scheme deficient, both in plan and architectural treatment, can be said to lack essential qualities which can never be imparted to it.

ALTHOUGH the disposition of this important matter appears deplorable, in that an unusual opportunity seems to be, in a measure, wasted, much good would unquestionably result to the country at large, if the profession would profit by the experience gained in this competition. If, in the future, architects of reputation and ability would steadfastly and consistently refuse to take part in competitions, the conditions for which were notoriously at variance with, and it might almost be said in defiance of recognized standards, the lesson taught by this affair would not perhaps be too dear, even though the cost falls in great part upon the State. But when a Commission in meeting objections to what might be termed an impossible program, is able to exhibit letters from a half score of architects whose names are among those of the most prominent and able in the country, agreeing to accept the conditions and compete for the prize, it can hardly be criticised for assuming a somewhat independent position. Nor should we perhaps be too intolerant under such circumstances if some of the humbler members of the profession failed to recognize the difference between competing under outrageous conditions, and some other infraction of the professional code where the matter involved was not a two-million-dollar commission.

IT is not without significance that a number of men prominent in the manufacturing world have been engaged to lecture before the classes of engineering students at Columbia during the coming year. While occasional lectures on special subjects have been delivered by men actively engaged in engineering or manufacturing enterprises heretofore, the new plan goes much further, and proposes a regular series of lectures by practical men as a means of bringing the students into closer touch with the requirements of actual practice, and demonstrating, not only how a result may be obtained theoretically, but how it may be secured economically, and then applied to the everyday requirements of mechanical engineering. The new departure would seem to be directly in line with the recommendations of engineering societies, and is probably the nearest approach possible to the ideal preparation, which would include an experience that it is impracticable to supply to the student. To the men, who by their generous cooperation and aid have made the realization of this promising plan possible, much commendation is due. They are all men whose names will gain no additional lustre by their connection with this work, and, needless to say, it can scarcely be undertaken by them without considerable pecuniary loss.

THE AMERICAN ARCHITECT

AND

BUILDING NEWS

Vol. XCIV

WEDNESDAY, JULY 22, 1908

No. 1700



VIEW LOOKING NORTH FROM HUNTINGTON AVENUE.

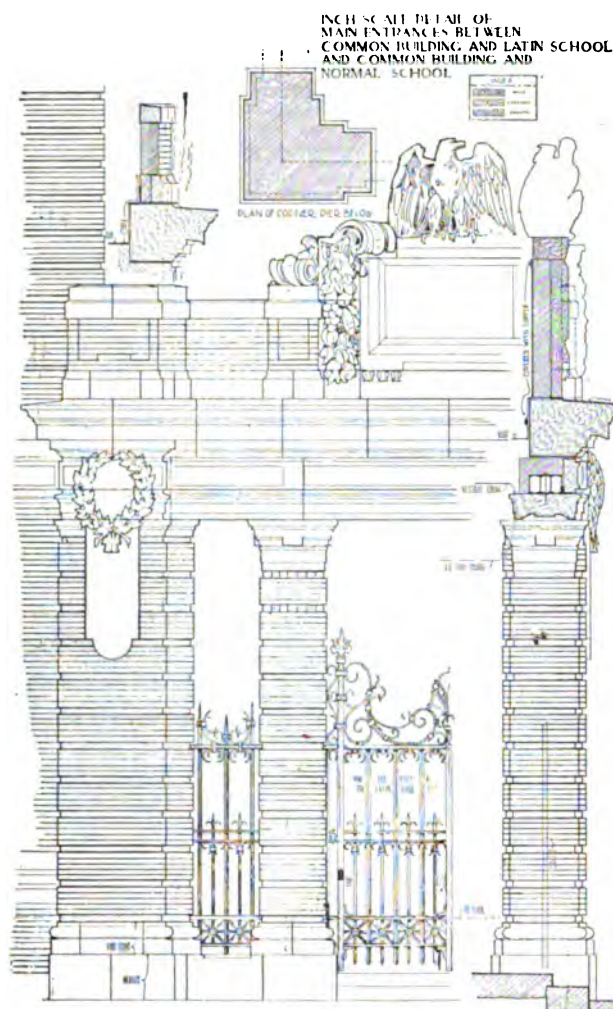
The Normal and Latin School Group, Boston, Mass.

AFTER a visit to the new "Normal and Girls' Latin Group" of school buildings in Boston the visitor, if he chance to call while the buildings are vacant, will find himself rather more disposed to ponder over certain educational and sociological problems than to give first heed to the architectural and structural excellences of the buildings—particularly if he has entered at the Normal School end of the group. Prepared to find the building vacant, the mind is naturally prepared also to discount the seeming excessive spaciousness of these educational buildings, and at once peoples the wide (12-foot) corridors with the ebb and flood of classes as they pass from room to room or, at last, into the open air. But imaginary beings are not as convincing as real ones and one wants facts as a foundation upon which to build inferences, and the fact seems to be that the Girls' Latin School, at the northerly end of the group, was designed to accommodate 600 pupils of the High School grade, while the Normal School, which balances it at the southerly end—a building which actually contains more space—is built to accommodate only 300 pupils, that is, taking account of the larger area of the Normal School, each pupil there has about twice as much space as is provided for each pupil in the Girls' Latin building, and this, too, although physically there is no great difference between the well-grown High School girl and the Normal School pupil. Further, although the buildings have excellent orientation, all of

them, yet if one of them is less favored than the others in this respect it is the Girls' Latin with its 600 pupils, not a few of mature age and so deserving, perhaps needing, the best physical conditions that could be provided; while if one of them is more favored than the others it surely is the Normal School, although the pupils there, not only fewer in number, are more mature in age and so better able to cope with unfavorable conditions. For some reason which we cannot detect the natural distribution seems to have been inverted as between these two buildings.

Bearing this seeming favoritism in mind as one wanders over the building, what seems to be another indication of it comes to light in the bath-rooms where the 350 Normal School pupils are provided with 60 shower-baths while the 600 Latin School pupils have but 30. From this and other indications it appears that, as the needs of the Latin School girls have been properly, even generously, provided for, their slightly older sisters have been still more handsomely cared for, and the lot of these teachers in embryo should be regarded as fairly ideal. But one consequence is that the "average cost per pupil," which in the twenty-seven new buildings built by the School-house Commission has averaged \$181.72, had in the case of the Normal School already mounted to \$914.70 at the time of rendering the Commission's report on February 1, 1907, some months before the buildings

were finished and a year before final accounts were adjusted. But it must be explained that the Normal School pupils have been charged with not only the cost of their own building, but with one-half the cost of the Common

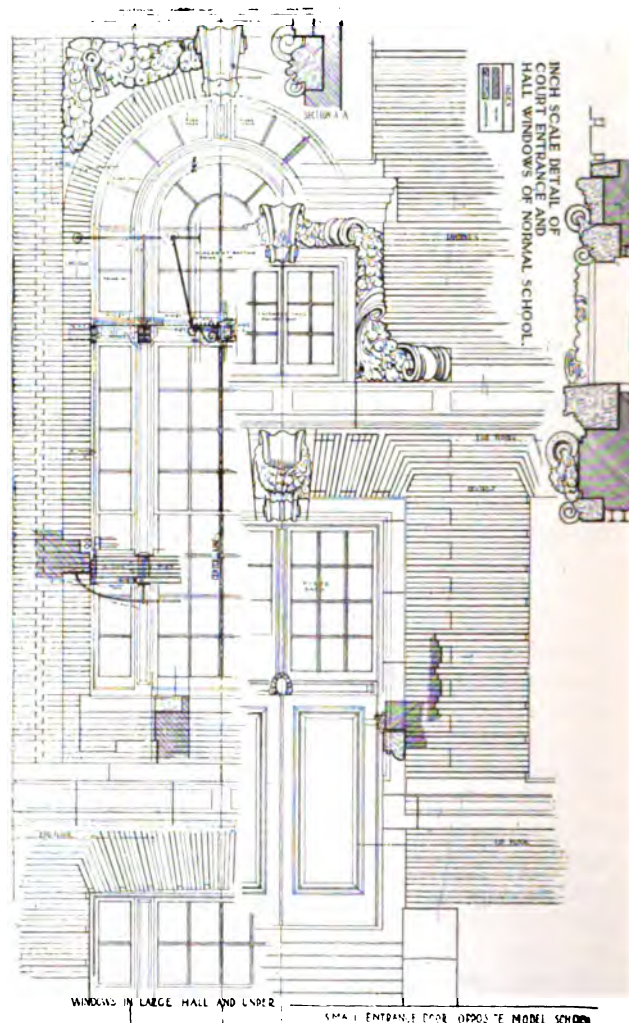


DETAIL OF MAIN ENTRANCE.

Building as well. This, however, is hardly a solace to the taxpayer.

Even the most parsimonious of taxpayers will admit that school-teaching is a nerve-racking occupation, tedious in its routine, and that teachers often have to occupy schoolrooms whose hygienic properties are certainly not of the best and, knowing this, will not perhaps be disposed to begrudge the money that has been spent in making the last years of the pupillage of the teachers of the future somewhat more than simply pleasant, something that comes fairly near to being luxurious—measured by the ordinary school-house standards. But if the said parsimonious taxpayer stopped to consider that a not inconsiderable percentage of these young women would shortly after having secured an expensive education abandon their intended work, one cannot help wondering whether he would still be content. But there are other ideas than sociological heresies that these buildings evoke. Architects have to satisfy the conditions of the problem presented to them: Professionally they do not have to concern themselves with determining whether a female teacher on marriage must abandon the schoolroom, or whether "equal pay for equal work" should be accorded to male and female teachers alike, and though sociological considerations are so attractive, it is well

here to examine how the conditions of the problem have been satisfied. Familiar with the exterior character of the group and the names by which its several members are designated for months before he found an opportunity to visit the buildings or to inspect the plans, the writer had inferred that the "Common Building," the one that holds the place in the group ordinarily given in such groups to the "administration building," was so named because it was used in common by the pupils of the three schools in the group—and so it is. But, arguing from the architectural expression given to the building, and perceiving that this must be a large hall, he more than half suspected that his ears had deceived him and that the proper title was the "Commons Building" and that when the group was finished and accessible to visitors he would find that the hall, sufficiently declared externally, was used for dining (or lunching) primarily and for lectures or assemblies when all the schools were brought together. He was quite unprepared to find that the real purpose—one might almost say the only one—of this costly building is to provide the young ladies with a very commodious and well-equipped gymnasium! To be sure there is housed under the same roof with it the kitchen and two lunch-rooms, but the gymnasium, with its boiler-rooms, toilet-rooms and bath-rooms, occupies at least



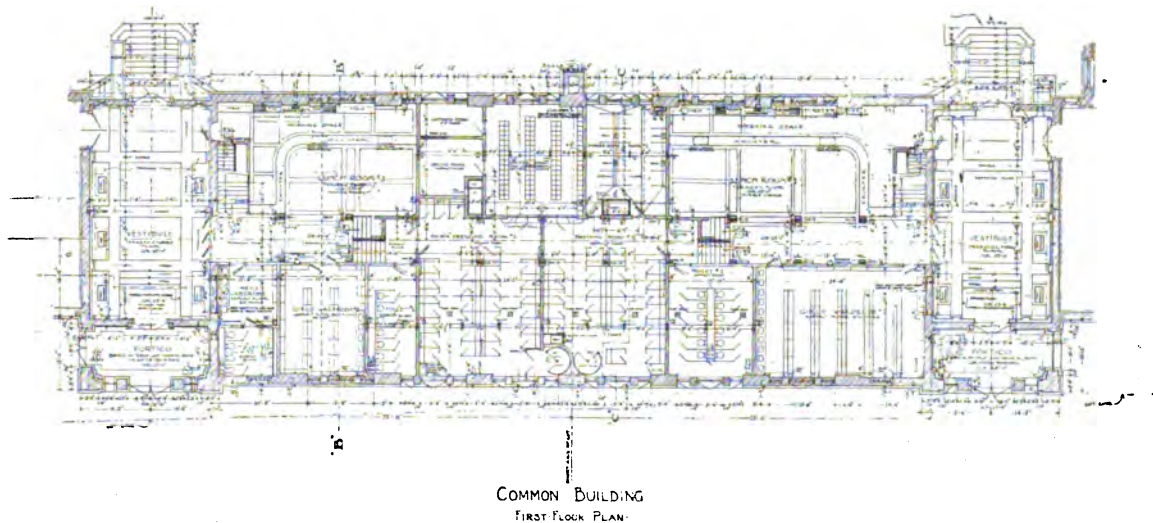
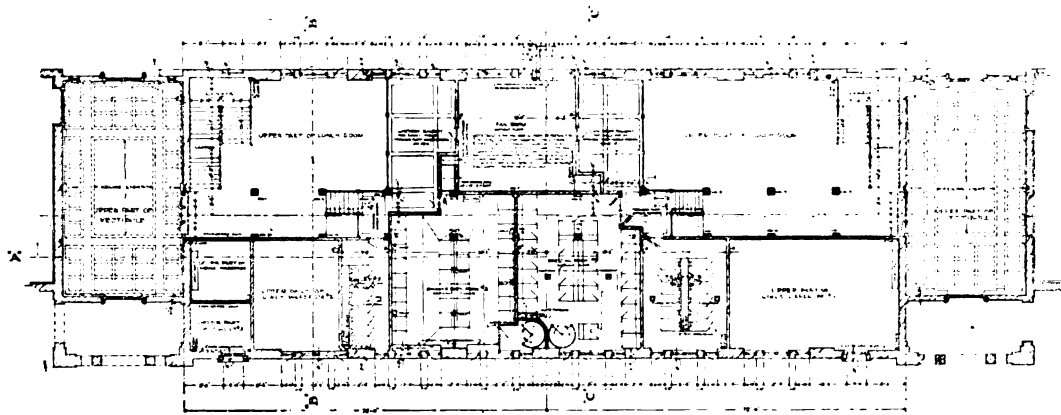
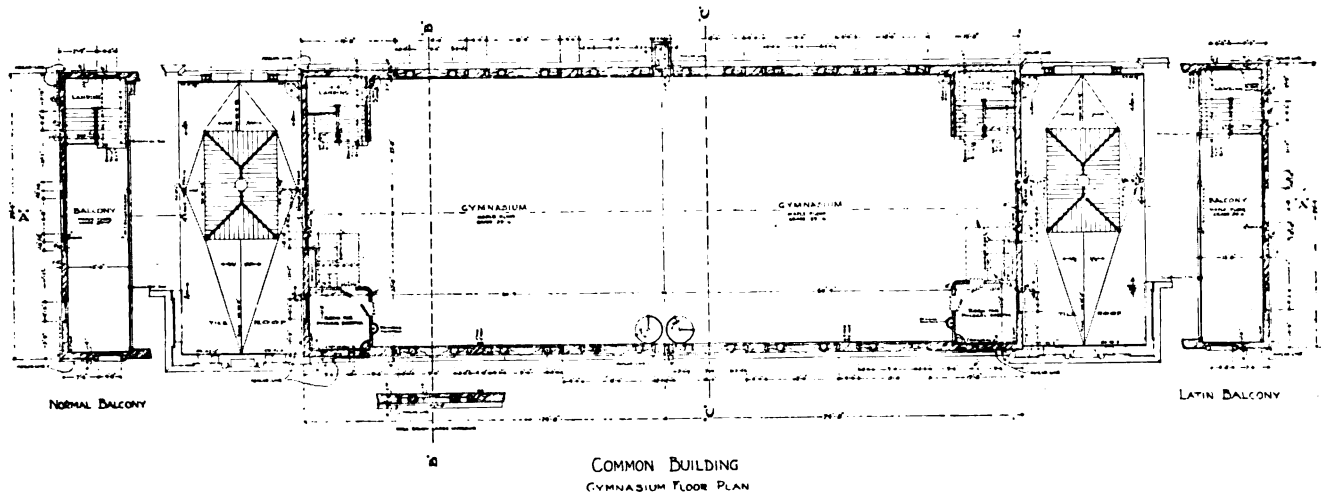
DETAIL OF COURT ENTRANCE AND HALL WINDOWS OF NORMAL SCHOOL.

four-fifths of the space and is chargeable with at least four-fifths of the cost.

It is in this gymnasium that was noted the only thing in the entire group that looked like a defect. Considering

the really considerable amount of wood finish in the room, augmented by the elaborate fittings for gymnastic exercise—all finished as usual with shellac or varnish—it certainly looked a little odd that the light steel trusses of the roof should be exposed unprotected by fireproofing of any kind. One is tempted to feel that in this room at

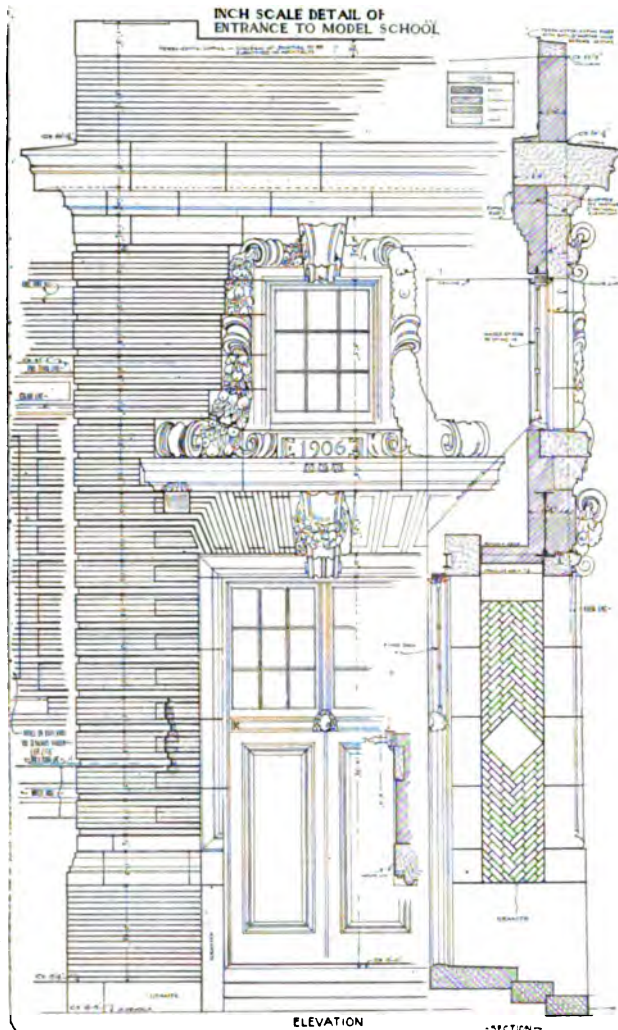
lently than the latter and, apparently, always as classes; the consequence of this is that they must resort to the bath-room, still as classes, and this leads to a peculiar arrangement, for though each pupil has her independent shower she still is a member of the class and so has to take the same dose that is served out at the same time to



least an automatic sprinkler system might have been provided without earning a rebuke. And, speaking of sprinklers, it may as well be explained here that the reason why the Normal School pupils require 60 showers to the 30 provided for the Girls' Latin pupils is that the former are expected to exercise more regularly and vio-

lently than the latter and, apparently, always as classes; the consequence of this is that they must resort to the bath-room, still as classes, and this leads to a peculiar arrangement, for though each pupil has her independent shower she still is a member of the class and so has to take the same dose that is served out at the same time to

peculiarities and differences of heart-action. The water used at these fountains is delivered from the roses at those temperatures, there being three "mixers," each with a thermometer attached so that the operator can secure



DETAIL OF ENTRANCE TO MODEL SCHOOL.

exactly the predetermined temperature at which the three courses of treatment shall reach the bodies of the pupils.

The Girls' Latin pupils, seemingly, are expected to take their exercise more as individuals and, except for those who are elected to positions on "teams" and those who have a real love for violent exercise, not to be greatly in need of bathing. At any rate the Girls' Latin pupils have the action of their shower baths under their own independent control, in the usual way.

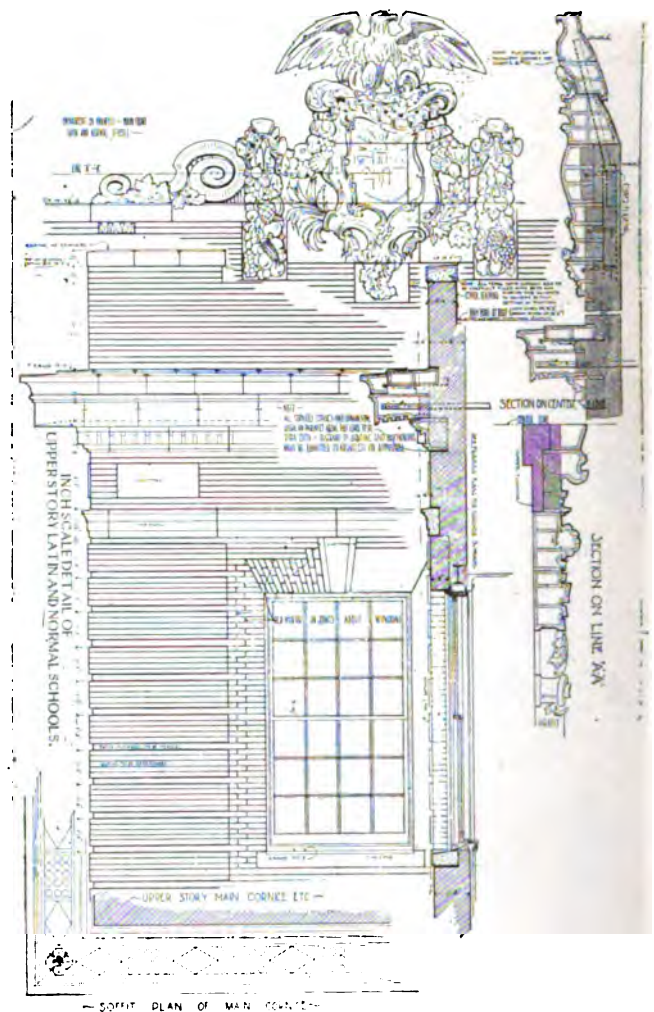
As all the buildings are of the "first-class" and really fireproof, structurally there has been no occasion for disfiguring the buildings with external fire escapes; fortunately the Boston building-law is more reasonable in its provisions in this respect than the similar laws in some other cities. Not only are the buildings fireproof, but they are well provided with doors to the outside and the wide staircases (five-foot) and the unusually wide halls (12-foot) seemingly remove any serious chance of injury during a panic, should one arise.

Our readers are already familiar with the peculiar system under which Boston has been building its school-houses during the last six or seven years, and the designs for the buildings in this group were procured in the same way; but, as the group was to be not only costly but

was to have as near neighbors some of the most notable buildings in the city, it was felt that every means should be taken to make the result satisfactory. Accordingly, the problem was put into the hands of three separate architectural firms to work out in cooperation with one another, the selected firms being Messrs. Peabody & Stearns; Coolidge & Carlson and Maginnis, Walsh & Sullivan.

Naturally, coöperation between these several firms was essentially limited to the period of studying the problem and settling on the arrangement of the group, the distribution of rooms in each building and the architectural design of each, although all of course maintained an interest in the work at all times. The architectural supervision was undertaken by Mr. Stearns, while Mr. Carlson acted as the agent of the School-house Commission.

As has been said the orientation of the buildings is admirable and the site is nearly ideal, for not only is there a wide avenue in front and streets on the other sides, but the group practically is on the outskirts of the Back Bay Park and has as near neighbors the Harvard Medical School, the new building of the Museum of Fine Arts, now under construction, and Simmons College, not forgetting Mrs. J. S. Gardner's famous "Venetian Palace." But while, so far as position and surroundings go, the site is unusually satisfactory, the same cannot be



DETAILS, LATIN AND NORMAL SCHOOLS.

said for it as a building site. The sixty or more borings taken disclosed the fact that the southeasterly part of the Normal School would rest on natural land while the

rest of the building and all of the others would be built over "made land," the gravel filling forming a layer 6 to 14 feet in depth overlying a layer of soft marsh mud that had an average depth of some 7 feet, the tough clay subsoil being found from 8 to 26 feet below the surface, according to circumstances, and the usual difficulties of building in the Back Bay district would have to be coped with. Accordingly, the buildings were all built on piles over which was spread a sheet of concrete reinforced under the Model School and the Girls' Latin with rods here and there.

Our readers will recall that it was this group of buildings that was made the scene of one of the fantastic investigations which the notoriety-seeking attorney for Suffolk County is so fond of conducting, charges having been brought that a sub-contractor was not using as much cement in the concrete as his contract called for. The very thorough investigation that followed showed that the concrete was of unusually good quality.

It was originally intended to build only the foundations of the fourth building of the group, the one known as the "Model School," but, as it was found necessary to provide a temporary home for the new High School of Commerce, a supplementary contract was made and the superstructure erected. This slight *contrattemps* somewhat enhanced the total cost of the entire group which, in round numbers, has amounted to about \$802,000, not at all an extravagant sum to pay for buildings of the character, but still overrunning the Commission's preliminary estimate by some \$60,000.

As just said, the Model School building is now temporarily occupied by the High School of Commerce, but as the term "Model School" is unusual, it may be well to explain that a model school is a necessary, or at least a very desirable, adjunct of a Normal School; for housed in it and in full daily operation, equipped with live scholars, are a kindergarten and the nine grades of primary and grammar schools, with their manual-training and cooking-school attachments. The teaching in the Model School is done by the pupils of the Normal School under supervision so that they get actual training in their life work before they receive their graduating diplomas.

ONE visits such a group of buildings as the "Normal-Girls' Latin Group" in Boston for the sake of observing those things which cannot be observed elsewhere—unless by chance there happens to have been employed constructive methods and materials of unusual interest. But of these there was nothing that calls for comment: the buildings are of brick, limestone and buff terra-cotta, built in the usual "first-class" manner, the dimensions of the rooms presenting no unusual problems. There are, of course, many places where ingenious solutions were reached, many places where there were clear evidences of good workmanship and careful preparation, but we could find precisely similar evidence in other buildings which were not specifically intended for educational uses.

In a somewhat similar way a visitor could justly disregard a close examination of the system adopted for heating, ventilating, lighting and plumbing the buildings, for they have their prototypes in thousands of other buildings, so a general statement will meet the present requirements.

The group is heated by a low-pressure gravity system, operated at about 40 pounds pressure. The plant, situ-

ated in the basement of the Girls' Latin Building, consists of a battery of four horizontal tubular boilers which have a total capacity of 532 horsepower. It was demonstrated during this first winter of occupancy—even though it was an unusually mild one—that it would be needful to fire only three of the boilers, so that the fourth will be utilized only in case of emergency or while one of the others is undergoing the regulation cleaning and repairing.

The heating is partly by direct radiation and partly by indirect radiation, each building being furnished with its separate plenum-chamber and fan for forced circulation, ten-inch fans being used in the Girls' Latin and Normal Buildings, while a nine-inch fan serves the Model School. For the toilet-rooms in the Common Building there is a 24-inch fan run by a direct-connected electric motor, while two other motors driving five-inch fans remove the vitiated air from the gymnasium and other rooms. The larger fans have, each, separate stationary engines. The heat supply is subject to direct control by a complete system of automatic temperature control apparatus established in each of the rooms of the three school-buildings.

The primary coils are, of course, installed near the plenum-chambers. The total radiation for the Girls' Latin is 10,486 square feet; for the Normal 10,591 square feet; for the Model 8,355 square feet, and for the Common 5,270 square feet. The vitiated air is led by ducts to the ventilators in the attics, the current being accelerated by exhaust fans, motor-driven. As the buildings are grouped about a spacious interior court, fresh air for the plenum-chambers can safely be drawn from that source. This court-yard is spacious enough for a certain amount of leisurely strolling, if not for any violent form of exercise, and much attention has been given to intelligent planting with shrubs and vines, while large exedras at the north and south add agreeable decorative features. The size of the courtyard together with the moderate height of the buildings allows to each factor of the group as good lighting as if it stood completely isolated. One consequence of this arrangement is that not only does the group present an agreeable *ensemble* from every point of view, but also the architectural effect of the frontages on the courtyard is highly satisfactory. Considering the magnitude, character and complication of the plumbing-work, its cost was very reasonable, as the original contract, which covered work in all but the Model School, amounted to only \$29,062.

The character and thoroughness of the work required may be instanced by the fact that all cast-iron pipe and fittings had to be delivered at the building free from paint or tar coatings, so that they might thus be tested by the oil-test. After the work was erected it had to be tested by the water-test, as required by law, and finally the whole system had to endure successfully the smoke-test. Although lighted by electricity, the buildings had to be piped for gas, so that there is an auxiliary lighting system at hand in case of need. But, apart from lighting, gas would have had to be laid in for the sake of the cooking-ranges in the cooking-school, for the Bunsen-burners in the laboratories, and for other uses in connection with laboratory or manual-training work.

The specifications for electrical work covered pretty nearly the entire field of electrical engineering, for, besides wiring the buildings for lighting—3,501 lamps had

to be installed—there had to be set 1,702 outlets and receptacles in the exact spots called for by the drawings and the perfect convenience of pupils, teachers and demonstrators who were to use them. A perfect system of intramural telephonic service with its annunciators, switch-boards, desk telephones and so on had to be installed, and so too did an equally complicated system of bell signalling with different-toned bells, buzzers, etc. To this must be added the clock system, not only time-keeping clocks, master-clocks and secondary clocks as well as the outside, four-dial clock on the tower of the Common Building, but programme-clocks, and finally in the same category there are eleven three-inch and six six-inch door-bells.

The contractor had also to install a subsidiary fire-alarm system, furnish the stereopticons and an equal number of reflectoscopes. By the aid of these reflectoscopes solids can be thrown on the screen quite as satisfactorily as if the subject had been prepared on the usual glass slide.

Besides this a number of motor-generators and induction motors, ranging from one horsepower up to twenty, had to be installed for running heating and ventilating fans, operating machinery in the manual-training room and still others for instruction and demonstration in the physical laboratory and lecture-rooms.

As one studies the specification and views the buildings it is borne in on him that for educational needs in the modern understanding of the term electricity plays an even more important part than either heating or plumbing. But one visits a school-house for the sake of seeing things that cannot be seen elsewhere, the things that really make the building a school-house and not something else. The arrangement and distribution, of course, count for something, but the same rooms just so arranged might be used for other purposes. It is then the educational equipment, the "school fixtures," that give school-houses their distinctive character, and these should have the visitor's careful consideration. Now the one thing that gives distinctive character to the school-room is the blackboard, and it is a distinct disappointment to observe that Dr. C. H. Williams, who has the eyes of the school children of the city in his care, seems not yet to have accomplished the acceptance of his advice that lighter-colored "blackboards" and colored crayons should be substituted for the chalk and blackish surfaces which have been used from time immemorial. All the blackboards in these buildings are slabs of natural slate, and so in some degree better than the positively black-painted boards. Many of them are associated with an interesting feature, the "battery blackboard." This is set in a window casing that projects somewhat beyond the face of the slate blackboard and is furnished with double-hung sashes of solid wood—narrow slips carefully glued up—and covered on the school-room side with manila paper which has been given three coats of "blackboard paint." The natural slate blackboard is, however, continuous, but when it passes behind the "battery" frame it is set back so as to allow the upper sash of the battery to slide down in front of it. The teacher or pupil who uses it thus has three surfaces on which to work at need or discretion. The device is so obviously useful for lecture-work, for the preservation of a series of fundamental formulas or for certain kinds of diagrammatic work that one rather wonders to see only a single battery in a given class-room or lecture-hall.

The major part of other school equipment, aside from the all-important matter of the chairs in which the pupils pass most of their time, consists of shelves, drawers, cabinets and bookcases which are useful and necessary but are pretty generally of the type that is provided for other buildings, and, moreover, these articles are fitted into such spaces as the planning affords. They are not fixtures of definite size and form for which provision has to be made.

The fittings of the laboratories—chemical and physical—and the equipment of the manual-training and cooking rooms are of much interest, but it is impossible within permissible space to describe them—it takes half a dozen or more printed pages of the School-house Commissioner's report to describe the fittings of a chemical laboratory—but a few of the peculiarities can be noted. In the first place the sink is the all-important feature, and the water-supply must be abundant, but must be furnished under controlled or reduced pressure. The sinks here are of soapstone and about the waste outlet in the bottom slab are cut five concentric grooves called "mercury-rings," the object of which is to prevent any mercury—which is costly—from being carried away to the drains in cases where it is accidentally spilled.

The construction of the "hood" which, next to the sink, is the most necessary of equipments, is sufficiently shown in one of the accompanying plates, and so, too, is the arrangement of the two and three-level sinks that have to be used in the collection of gases. The hood, enclosed by glass sashes connected at the top with a separate vent-pipe, and furnished with a bevelled, dished and drained floor of slate about two feet ten inches above general floor level, is used in the case of those chemical mixtures which give off noxious or unpleasant fumes while being evaporated. Gas connections for the Bunsen-burners are a necessity, the stop-cocks or valves being outside, not inside, the hoods, and the sashes in front should give an opening when raised that allows ample freedom to the student. Hoods in a laboratory should have a total floor space equal to about one-tenth of the space occupied by the working desks or sinks.

Wall-maps and charts on spring-rollers housed in hoods bracketed out from the wall are amongst the obviously convenient fixtures; but a less obvious convenience is furnished in the shape of slotted mouldings over the blackboards and elsewhere, so arranged that small wall-charts or photographs can easily be slipped in or out.

As the pupils here are generally of fairly mature age, the desk seat is of not so much consequence as in those schools where the children are still growing, but even here the seats are provided with backs which, within a small range, can be adjusted to the figure or stature of the user. Moreover, the back tilts forward so as to give passage between the seat rows, a much better arrangement than when the seat itself tilts up against the back.

The fact that the buildings are to be used mainly by girls and women has not been lost to sight, and there have been provided sundry "rest-rooms," and hospital rooms where first aid of a simple kind can be administered without loss of time. In fact the visitor leaves the buildings with a very sensible perception of the fact that the architects and the authorities have been as keenly alive to the humanitarian as well as to the educational and economical conditions of their problem.

The Secret of the Sphinx Revealed

UNTIL recently—to be precise, until the publication last week of the report of the proceedings of the Spiritist Congress—it has been assumed, erroneously, as it now appears, that the sole recipient of the secret of the wonderful construction and mechanical skill of the early Egyptians was that mysterious being with the head of a man and the body of a lion, known to the Arabs as the “Father of Terror.” Among the architectural achievements of the Egyptians, the Pyramids, for ages past, have held the pride of place. Lénormant describes them as “the most prodigious of all human constructions,” and they were regarded by Greece and Rome as among the seven wonders of the world. Historians of all ages and of all countries, from Herodotus to James Ferguson, have felt and expressed the warmest admiration for the vast amount of skill displayed in their construction, skill which enabled these Egyptian builders to pile one over the other, blocks of granite weighing more than fifty tons, some over thirty feet in length, and so well set and fitted that the joints are scarcely perceptible. By what means the Egyptians were enabled to deal with these immense blocks of granite, which a modern engineer would hesitate to handle, has long been a mystery. But the secret has now been revealed, for at the meeting of the congress held in Paris on June 11, M. Bose announced to an awestruck and sympathetic audience that the superposition of the granite blocks of the Pyramids was effected by the combined wills of the assembled thousands acting under the control of adepts in their midst, and of priests in the adjoining temples, whose ruins are always close to these monumental piles. In short, the early Egyptians were masters of the art of levitation. We are pleased to be able to draw our readers’ attention to this profound and scholarlike solution of a much-debated problem, and, incidentally, with this glorious result of a congress fresh in our minds, we take the opportunity of expressing our regret at having recently published some rather disparaging remarks concerning congresses in general.—*Builders’ Journal* (London, England).

The Assertive Billboard

IF the people and press of the country would take united action to suppress the billboard nuisance, something might be accomplished toward a better enjoyment of life out of doors.

The dweller in large cities finds his æsthetic sensibilities constantly affronted by the insistent demands on his attention by advertisements that flaunt their announcements at ever turn. Whether he saunters upon the surface, betakes himself to the elevated cars, or drops into the subway, these vari-colored posters, whose color schemes offend good taste, claim his notice. Of course, that is what they are there for, but it is doubtful if there is any good reason for the use of public vehicles to foist upon one’s notice the wares of tradesmen.

No one can dispute the value to the vendor, of judicious advertising, but there is a time and proper place for it. If we walk abroad these offensive billboards stare at us with all their ugliness; if we take train for some distant

city we find the entire route lined with signs, and, while we may object to this defacement of the landscape, the discordant note in a beautiful view—and it always happens that the most assertive signs are set up in the most picturesque places—we cannot cease to admire the skill of the advertiser who so persistently repeats his story between New York and Washington, that it is indelibly fixed on one’s memory.

It is to be regretted that the scenic preservation societies, now largely inactive, could not be urged to energetic action toward mitigating this nuisance.

That architects are ordinarily alive to the bad taste displayed in the discriminate placing of advertisements on fences and walls is generally recognized, as it was by the architect of the new municipal building at New Bedford, Mass.

With a proper sense of the artistic properties, and doubtless warned by past experiences, he inserted the not unusual condition in the specifications that, if it was found necessary to place a fence around the lot during construction, no advertisements should be allowed thereon.

It appears that, ignoring this condition, the city committee in charge of public buildings allowed themselves to be swerved from their better judgment, and gave a concession to a local advertising agent, permitting him to cover the fence surrounding the municipal building with many conspicuous advertisements.

Naturally, the better element among New Bedford’s citizens have expressed in a most forcible manner their disapproval of this action, and there is now in progress a mimic warfare for the abatement of what they very properly term an infringement of the rights of the people.

We shall watch with interest the outcome, and would be glad to know that other cities were equally insistent of their rights.

Melrose Abbey

THE description of Melrose Abbey by moonlight which appeared in “The Lay of the Last Minstrel,” published in 1805, was not without its influence in creating interest in Gothic. At the time a part of the ruins was used as a parish church. Southey remarked in 1805 that the finest of the abbey windows was injured by the weight of a clock placed above it, and another window served as a passage into the church. The ascent to it was on planks. About 1810 a church was erected in the village of Melrose, and this was partially destroyed last week by fire, for, although the walls remain, it is doubtful whether they can be restored. The organ in the church cost £700, and is now lost. After the new church was set up, Scott was able to carry out some reparations at the Abbey, the Duke of Buccleuch, who possessed the Abbey lands, paying the expenses. Scott was proud of his amateur restoration, for in a letter to Lord Montague he wrote: “Melrose is looking exceedingly well. I begin to think taking off the old roof would have hurt it, at least externally, by diminishing its effect on the eye. The lowering of the roofs of the aisles has had a most excellent effect.” Much as he admired Melrose, Scott loved to make occasionally a raid on it in order to carry off pieces of sculpture and other ornament for the embellishment of Abbotsford.—*Architect and Contract Reporter* (London).

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Illustrations:

The Normal and Latin School Group, Boston, Mass.
(10 pages).

THE almost universal, and, it must be admitted, righteous dissatisfaction which has been expressed with the award in the recent prison plant competition held in this State is in striking contrast with sentiments voiced in the case of many other important competitions conducted throughout the country during the last decade. It is true that in the majority of instances where satisfactory results have been attained modern methods have characterized the proceedings by which plans were obtained, yet some states and municipalities continue to secure plans for important buildings in accordance with the faulty and archaic method employed in this latest fiasco. They are, however, fortunately few, and the number is fast diminishing as a consequence of lamentable results that have almost invariably attended the practice. The recent unhappy experience of a sister State in the erection of her public buildings, plans for which were secured by a surprisingly similar method, would seem to have offered an object lesson that New York might well have profited by, but apparently it was either misunderstood or ignored.

IT is inconceivable, however, that matters can longer remain unchanged in this State. The invariably gratifying outcome of competitions held for Federal buildings, in accordance with the provisions of the "Tars-

ney Act," by which three judges are chosen from the ranks of prominent practicing architects to make the award, cannot be ascribed to fortuitous circumstances. The Act has been in operation long enough to effectually disprove any such claim. While naturally there have been at times some slight differences of opinion concerning awards made under this Act, they were of a character to be expected and respected, and in no instance, so far as our memory serves, has there been any suspicion of favoritism or undue influence. Even cases of dissatisfaction have been rare. Recognizing the wisdom of the method employed by the Government in selecting architects for public buildings as evidenced by results, Mayor McClellan adopted it in a slightly modified form when plans for a City Prison on Ricker's Island were desired, and again in the case of the new Municipal Building which this city proposes to erect at the Manhattan end of the Brooklyn Bridge. In both instances the wisdom and success of the plan was amply demonstrated.

WITH the long list of successfully conducted competitions on the one hand, where the awards have been just and accurate, where the buildings have been erected without a word of suspicion or just criticism being directed against the conduct of the operation, a credit to the architect and to the State, while on the other are arrayed buildings too numerous, and in most cases of too malodorous origin and fame to mention, the majority of which resulted from what were called by courtesy "competitions," conducted on the political plan, there can be no doubt concerning the attitude of right-minded and intelligent men toward this question. The matter must, however, be brought to general attention if it is to be corrected. New York is entitled to better service and better buildings than can ever be secured or reasonably hoped for under the present régime: and it would seem as though present conditions offered peculiar opportunities for efficient action in the cause of progress and reform. Moreover, it appears probable that the architects of the State, if alive to their own as well as the public good, could be of much service at this juncture.

THE perennial and general interest in art circles that attaches to the subject of the Venus de Milo and the controversy regarding the exact position of the missing arms is greatly stimulated by the recent report to the effect that an un mutilated terra cotta representation of the famous statue, with arms complete, has been discovered in Greece. According to this report the statuette found exactly reproduces the Venus de Milo type, and represents the goddess holding a mirror in her right hand, while her left supports her drapery. After nearly a century of doubt and uncertainty which has been productive of much speculation and a prodigious amount of literature, in the form of articles by archæologists and others, it will undoubtedly be disappointing to many if this latest apocryphal work is finally accepted as settling the question. Indeed the solution offered does appear inadequate, and although we realize there is a possibility that future developments may require a redistribution of the matter, we are inclined to allow the report to rest for the present under the "important-if-true" classification, feeling that there is a strong probability of its lacking in the essential quality.

THE AMERICAN ARCHITECT

AND

BUILDING NEWS

Vol. XCIV.

WEDNESDAY, JULY 29, 1908.

No. 1701.



LOOKING FROM WEST SIDE OF CUSTOM HOUSE AFTER THE FIRE.

The New Baltimore Custom House

THE United States Custom House at Baltimore, now completed, has, during its construction, witnessed one of the greatest conflagrations in the history of this country.

It had reached its third story in 1904, on the day that Baltimore was fire-swept, the columns being up to about half their height. Standing surrounded by ruins, it came well through the fire. Many stones, however, were split and spalled by the intense heat that assailed the building. These were removed and replaced; the northwest corner of the building being practically taken down and rebuilt, and some minor damage to the interior steel framing and other work repaired.

The cutting out of some of the great stones, defaced, was a difficult and expensive operation.

This building was the fifth awarded under the so-called "Tarsney Act," an Act of Congress, authorizing the Secretary of the Treasury to engage architects outside of the Government service to design large public buildings. Under this Act, the procedure of the Secretary of the

Treasury is to invite architects to submit drawings in competition, and from these drawings the award is made by a jury appointed from among the ranks of practicing architects.

In the competition for the Baltimore Custom House drawings were submitted by eleven architects or firms. By an agreement entered into by the competitors among themselves, and at the suggestion of the Treasury Department, it was agreed that the winner should pay the sum of \$500 to each of the other competitors. This was done, and in this case alone.

Messrs. Hornblower & Marshall, of Washington, were the successful competitors.

The cornerstone of this building was laid on June 13, 1903, and after almost five years spent in construction, was accepted and occupied by the Government this year.

The building was begun and completed under the administration of James Knox Taylor, Supervising Architect of the Treasury, under Secretaries Gage, Shaw, and Cortelyou.

The appropriation for this building fixed a cost limit of \$1,500,000, and the building, including its decoration, has been completed within this limit, excepting only a special allowance by Congress to cover the contractors' losses by the fire of 1904.

The building is located on Gay Street, between Lombard and Water Streets. Its general plan is E-shaped, with a frontage of 252 feet on Gay Street, and about 140 feet on the side streets.

The central feature of the plan is the "Call Room" on the re-entering court, lighted on three sides.

The material is granite, and the motive of the design has been to attain a scale and simplicity of elevation suitable to that material. The exterior walls and main partitions are entirely of masonry. Steel columns and beams, with terra-cotta floors, make the rest of the interior construction.

The stone of the two-storied base was quarried near Laurel, in Maryland, and for the three stories comprised within the column-height of the Ionic order, granite from Mount Airy, in North Carolina, was substituted, while the entablature, in whose height is an attic story, lighted from the roof, is again of Maryland granite.

Of the interior, the first-floor piers, pilasters, dado and doorways are finished in marble from Hauteville, France. This marble has a yellow-gray tone, and has been rubbed to a flat—not polished—surface.

On the floors above the first floor the finish is of white Vermont marble. Throughout the building the stairways, the floors of the halls, and the corridors are of pink Tennessee marble, with a bordering of yellow Sienna, pink-and-umber veined on the first floor, and Verde roseate marble

on the second floor. The main stairway is paneled at the sides with "Roseal" Tennessee marble. The principal entrances have large panels, placed high in the walls, and these are finished in Italian Brescia violetta marble from near Carrara. Rubbed to a flat finish, it is

set in slabs, thus richly enhancing the almost pictorial illusion of the rich veining. In the Sub-Treasury, the marble is green-veined from the Massa-Carrara district in Italy.

Throughout the interior, the skillful selection of marbles, both in texture and in color, presents a beautiful effect, and shows rare artistic perception. The wood finish of the interior is in oak.

In the basement the walls are faced well up to the slight cove of the ceiling in white-glazed brick, on a base of brown-glazed brick. Secondary partitions on this floor are of iron and glass.

On the granite blocks flanking the Gay street entrance are placed bronzed standards, bearing lights in the form of old ship lamps.

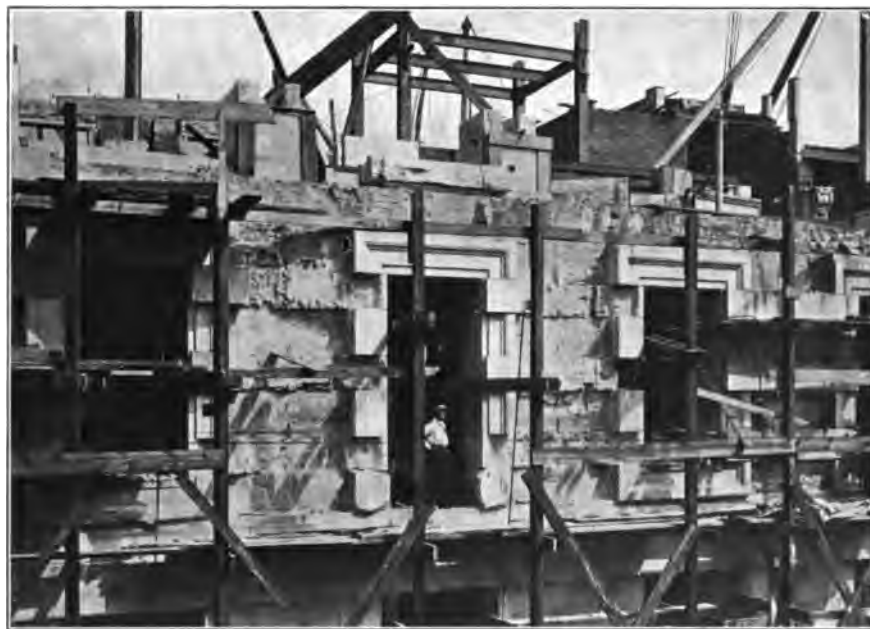
The dominant feature of the interior is the spacious "Call Room," which forms the center of business activity in the transaction of Custom House business. The plan is rectangular, of approximately 90 feet by 57 feet, and it is 34 feet in height. As will be seen, its proportions are admirable, and its lighting skilfully handled.

The architectural treatment is of coupled Ionic pilasters, standing

against the piers of a continuous wall arcade, and supporting a paneled and bracketed frieze, surmounted by a dentil and modillion cornice, above which a depressed cove merges into the strongly enframed single panel of the ceiling, executed in Caen stone cement.



GAY STREET FRONT AFTER THE FIRE.



SHOWING METHOD OF CUTTING OUT GRANITE SPALLED BY FIRE.

The lower part of the counter screen is in Italian marble, the face of Paonazzo from Pietra Santa, of rich color and veining, with a base of verde antico reboro from Campromorane, and a top of verde antico from Thessaly.

From this the eye rises to the enjoyment of the paintings in the lunettes of the arcade, and in the spandrels over their shoulders, up to the cameo-like panels, in white on delicate blue and green grounds, of antique forms of shipping, until it rests on the fair distance of the ceiling picture, with its procession of modern merchant sailing ships drifting out of the mists of the morning in Mr. F. D. Millet's apotheosis of the architecture of the sea.



LOOKING FROM GAY STREET FRONT AFTER THE FIRE.

This splendid decoration by Mr. Millet is one of the notable paintings that have been executed to embellish the busy marts of trade and commerce.

It was under the artist's direction that the painted decoration of the building throughout was executed.

The ensemble leaves nothing to be desired, and the result achieved by the intelligent cooperation of architect and artist stamps Baltimore's new Custom House as among the most successful public buildings erected in this country.

Materials

THE *Journal of the Royal Institute of British Architects*, a publication of greatest value to the profession all over the world, invariably contains material of much timely and general interest. The addresses of its members at stated meetings and the stenographic notes of the discussions which follow are valuable contributions to architectural literature.

At a recent meeting of the Leeds and Yorkshire Architectural Society, Mr. Paul Waterhouse, M.A., Oxon, read an essay on materials. The following extract from this essay is worthy of thoughtful perusal:

"Be it never so strange in its character, so new in its

needs, or so revolutionary in its appeal against traditional form, it is impossible to conceive of any building the designing of which is beneath the dignity of an accomplished architect's skill. It may present by its problem a material which is usually deaf; but the prince among architects is he who will call from that deafness an answer, not he who meets the deafness with dumbness.

"By this time I think I hear someone whose patience is nearly exhausted say, 'This view of yours about material, this grouping under the name of material, not only all the physical products with which building is effected, but also half at least of the operations in which the architect displays his talent, is a ridiculous whittling down of the sphere of the art itself. You have defined architecture by elimination, and have left but an invisible needle point as the residuum.'

"I think I will answer this first by an illustration. There is a story in the autobiography of Berlioz which relates that when he was wandering, apparently without purpose, on the shores of the Mediterranean he was arrested as a suspicious person and subjected to a Police Court trial. 'What was he doing?' said his tormentors. 'Composing,' said the composer. At that they laughed aloud, and, with an air of conviction, reminded him that musical composition was not to be accomplished without the aid of a grand piano.

"I was going to say that good planning, though an essential element in good architecture, was one of the things that have to be set down on the material side; the remembrance of this story assures me that I may almost go further still.

"All the outward and drawing-board manifestations of the design, as well as all the manifestation in wood and stone are *grand piano*—in other words, are material. The art, the architecture, is an inner thing which the architect may bear about with him on the sea shore, and run therewith the same risks as Berlioz. Happily, a drawing-board as a badge of sanity is more easily carried than a piano-forte. Shall we, then, merely carry drawing-boards because there are fools about who may misunderstand our motives if we show no other evidence of occupation than a hand pressed to the heated brow? Heaven forbid! The drawing-board lies closer to the brain than that. In fact, you will spring out at me with the observation that the parallel to the drawing-board in the musician's realm is not the grand piano at all, but the sheet of ruled music paper. And you are quite right. The fact, of course, is that the parallel must not be pressed too far; its value really lies in this: that just as the musician can do the deepest and highest part of his work without making any such outward demonstration of it as is visible or audible to the police, so most architects will acknowledge that many of their toughest problems have found their solution, not through the point of a pencil, but in pure brain exercise, carried out in bed perhaps, or by the aid of a pipe at the fireside.

"This talk about music reminds me of another point which will help our argument. The mistake made by the *gendarmierie* in the case of Berlioz was not merely a misunderstanding of the method of musical composition, but a subtler and commoner mistake; the confusion of one art with another. There are in the kingdom of music two arts—perhaps more—the art of the composer and the art of the executant; and, if you come to think of it, these arts differ in the scope of their material, a reflection which at least suggests the possibility that the difference

between one art and another is largely the difference between their materials. At all events, we discover what Aristotle discovered long ago, that every art of any consequence has subsidiary arts attached to it. I am not sure whether we ought not rightly to reserve the term 'art' for the sovereign or primary arts, finding some other title for the less or ancillary crafts.

"The people who find art in a picture which is merely a realistic representation of a natural object, whether it be a slice of salmon or a race-horse, are making the mistake of the prosecutors of Berlioz, and similarly those who think a man a good architect merely because he is a good constructor make the very same mistake. And it is my belief that we can reduce these mistakes to misapprehension of material. I will not stay to discuss now why it is that the man who can imitate salmon-slices and

Baroque Architecture

The term "baroque," when used with respect to architecture, is generally applied to a design, conceived in the Renaissance style of art, of which the ornamentation is more lavish and pronounced than scholarly and correct, and it is therefore synonymous with the word "rococo," which custom has sanctioned as conveying an equally expressive and comprehensive term of reproach. Baroque architecture appears to have come into vogue some forty or fifty years after the foundation of the religious movement which culminated in the formation of the Society of Jesus (by Ignatius Loyola in 1534), and its confirmation by the Pope a few years later. This particular type of Renaissance architecture is said to have been selected and popularized by the Jesuits of the seventeenth



CALL ROOM ENTRANCE, NEW CUSTOM HOUSE, BALTIMORE, MD.

race-horses in paint is not thereby entitled to the name of artist, whereas the musical conductor, the singer and the violinist are, or may be; but it is clearly demonstrable that what is the goal of a subsidiary artist or craftsman becomes in turn material to his higher brother. In music, indeed, the interpretative craftsmen are themselves the material of the conductor, and he in turn is the material, or a part of the material, of the composer.

"In painting there is no such despotism of the master painter over craftsmen, but still that imitation of nature, which is to the salmon-and-race-horse man the acme of skill, becomes to the real artist material; and the architect, we see once more, vindicates his claim to kinship with the musician by having among his material, not merely the full craft of the constructor, but a whole army of constructive beings, general contractors, tradesmen, laborers, and even artists of sublimest art."

century, as being one that was well adapted to meet their special requirements, on account of the essentially modern characteristics it was considered to possess, but in all probability the change in architecture, as made in favor of the baroque or rococo phase of art, really denoted nothing more important than the inevitable reaction which was bound, sooner or later, to succeed the domination of the highly systematized classical style of the sixteenth century. The following are among the typical features of baroque architecture: An excess of curved lines which are often broken both in plan and elevation, the frequent use of sinuous frontages and wall surfaces, broken and quaintly carved and shaped pediments, huge scrolls and shell ornamentations, and twisted columns. The enrichment of the interiors of their churches was carried to such an inordinate extent by the Jesuits that suitability and good taste were too often

sacrificed to decorative profusion, and the frequent use of badly designed and weakly modelled figures and reliefs was generally unnecessarily emphasized by a mass of gilding. The salient characteristics of their architecture are to be found in many of the Jesuit churches of Italy and other parts of Europe, and these buildings may be regarded as memorials to the activity of a wonderfully well-organized and zealous brotherhood, and as evidences of the universality of its religious tenets. Of the later architects of the Italian Renaissance, most of whom worked in the style, Charles Maderne (1556-1629), Jean-Laurent Bernini (1589-1680), and François Borromini (1599-1667), are, perhaps, the best known, but it was due to the fostering care and ability of the two Viennese architects, Fischer von Erlach (1656-1723) and Lukas von Hildebrand (1666-1745), that baroque architecture

about, because, notwithstanding their originality, the architectural works of these masters of the baroque possess to a surprising extent that subtle quality of restraint which is only engendered by scholarship and tradition, and the absence of which causes architecture—in the highest sense of the word—to be non-existent. In no case, so far as we have yet been able to ascertain, has an attempt been made, in any of their buildings, to simulate originality by having recourse to the reprehensible device of distorting and misapplying the refined architectural embellishments which were bequeathed to mankind by the ancient artists of Greece and Rome. On the contrary, in the composition of the architectural designs of Erlach and Hildebrand, the importance of geometrical correctness in the "setting-out" is never forgotten, the main entablatures are left unbroken, the orthodox pro-



SECOND STORY STAIR HALL, NEW CUSTOM HOUSE, BALTIMORE, MD.

was brought to its highest stage of perfection. Indeed, it is perhaps no exaggeration to say that, under the conditions in which it was used by these two great artists, the baroque ceased to be merely a debased phase of an earlier, more refined and more scholarly art, but became a *style*. For, without any sacrifice of scholarship and tradition, Erlach and Hildebrand have enriched Vienna with some of the best and most notable examples of baroque work to be found in Europe. The buildings designed by these two architects are, in fact, of so high an order of artistic merit that they more than hold their own with any structures of a similar character erected during the later period of the Italian Renaissance. But it is difficult to say precisely how this result was brought

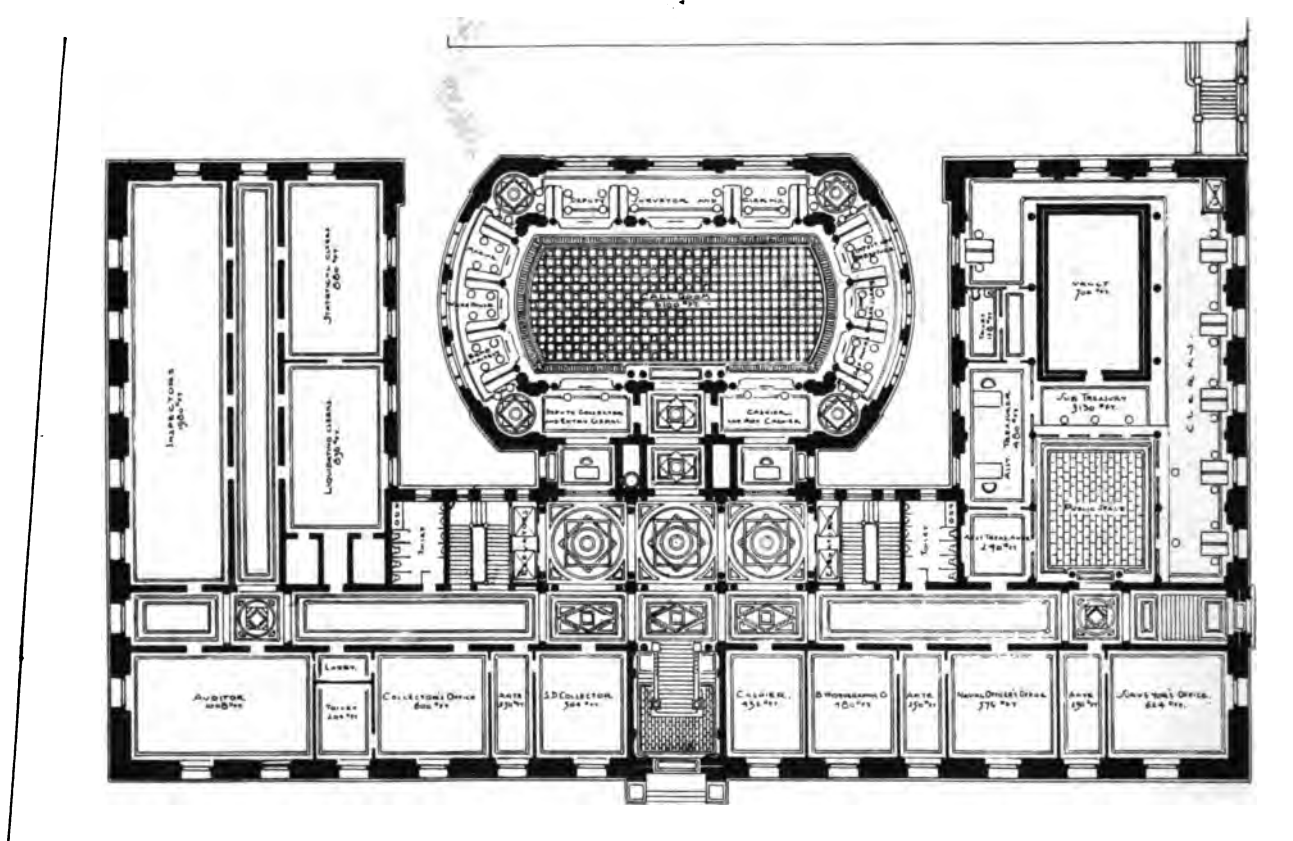
portions of the orders are not violated, the mouldings and enrichments are, in all essential respects, similar to those to be found in the buildings of the best period of the Italian Renaissance. And yet, mere architectural pedantry (or the scholarly application to new buildings of well-worn features of an older type of art), seems to have had but a small share in the production of designs which, paradoxical as it may sound, appear to be at once conventional in their inspiration, but untrammelled by a too close observance of tradition in their realization. To what cause are the undoubted artistic merits exemplified in the works of these two architects of the baroque to be attributed? We venture to think that their greatness as architectural designs proceeds from that rare combination

—scholarship and genius, without which no architect is able to produce buildings possessing, to use the expressive words of Wren, "the attribute of the eternal." For it is only by the laborious acquisition of scholarship that an architect is enabled to design with that full measure of strength born of the confidence he is able to feel in his own trained judgment, and it is the gift of genius alone which enables him to properly apply the knowledge he has gained, to the avoidance in his work of phases and features of art which are either well-worn and commonplace, or meretricious and ephemeral.—*Builders' Journal, London.*

J. F. Millet's Method of Work

HIS method almost invariably was to indicate a composition lightly in charcoal, seldom, at least at that time, having recourse to nature, and never from

kind I ventured to make, asking how in the studio lighted by a single window he could study the model as the figure would be lit out-of-doors. For reply he showed me a drawing, a mere quick sketch, now, to my better understanding, appearing, as I remember it, to have the indication of all the essential construction of the figure that the master with his knowledge of form needed to work from. The answer to my question appeared to me, however, enigmatical, and Millet, speaking slowly and with much emphasis, explained that a figure arrested in movement and with muscles relaxed demanded at the best on the part of the artist a memory of the appearance of the figure in action; that for him the weary imitation of a posed model seemed less true, less like nature, than to follow a sketch retaining the action of life with added truths garnered from a long and close observation; aided by the memory of the relation between a figure and its background under certain



COMPETITIVE PLAN OF FIRST STORY, NEW CUSTOM HOUSE, BALTIMORE, MD.

a model posing; his work from life consisting generally in a strongly accented drawing almost in outline. When the composition was finally arranged to his satisfaction, he drew in the figures and its principal lines, using a thick quill pen, with ink. Upon this, with semi-transparent color, he would prepare the dominant tones of his picture. A canvas thus prepared he would set aside to dry, returning to it later with more direct painting in opaque tones; gradually refining its color and rendering its effect to the point of completion.

I remember questioning myself, although I warmly approved of the result, if the means employed by this great painter were those which were thought consistent with the best modern practice. Slavish adherence to nature was then and after the watchword of the school, and, as many do, I confounded the practice of the school with that of the mature artist. Some question of this

effects of light.—From "A Chronicle of Friendships," by Will H. Low, in the July *Scribner*.

Scottish Antiques

A WARNING to American tourists against the purchase in Europe of so-called "antiques" was lately issued from the Washington Board of Manufactures, and it has been supplemented by the circulation of some advice forwarded by Mr. Maxwell Blake, the United States Consul at Dunfermline, Scotland.

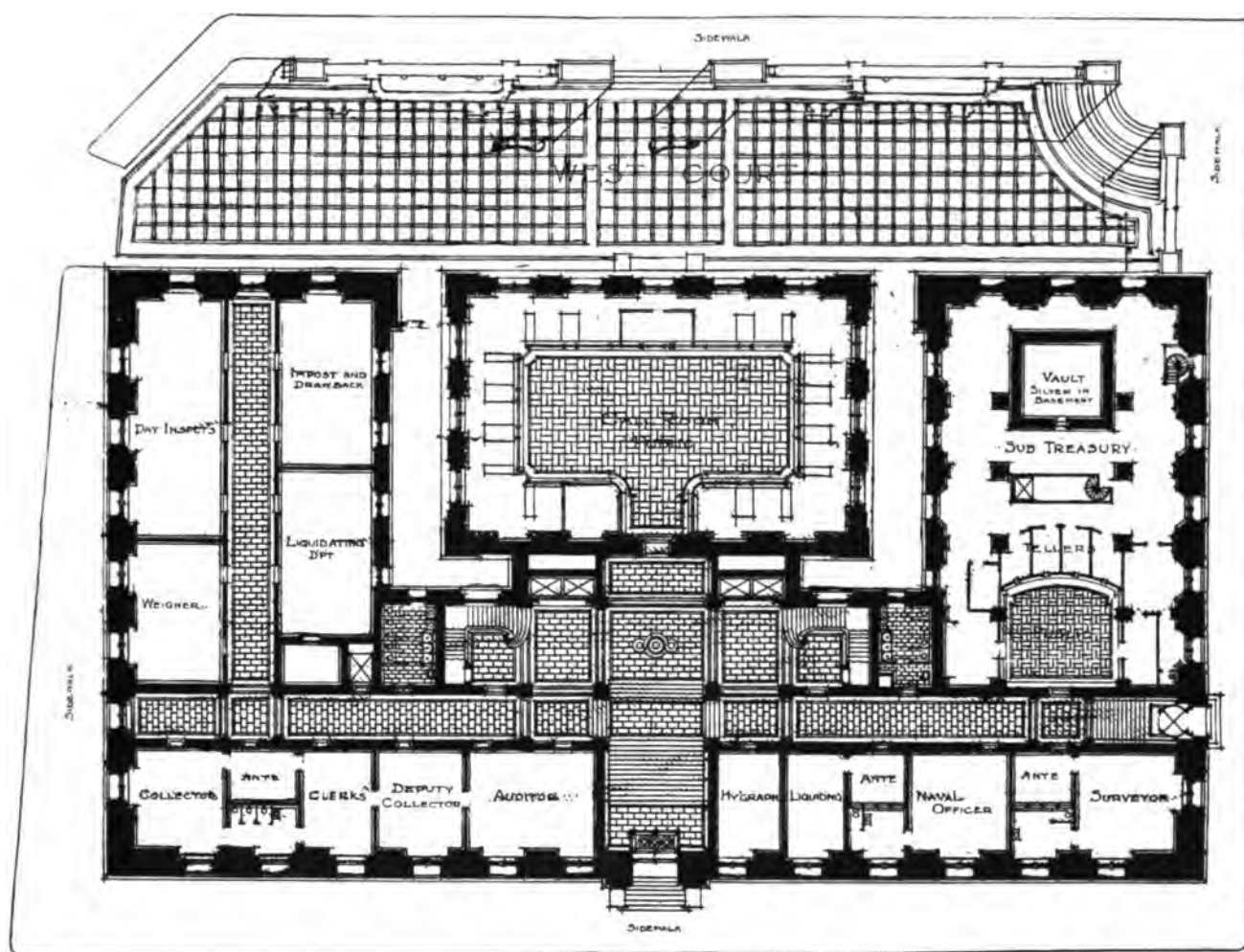
Mr. Blake says: As the summer season approaches, in anticipation of the usual annual influx of Americans, many of whom continue under the delusion that all things in this country are as old as its history, the growing legion of so-called "antique" dealers, from cities to remote vil-

lages and unfrequented farmhouses, are now occupying themselves in arranging for display their various stocks of made-to-order antiques. It ought by this time to be known to even those of little experience that the genuine antique, providing it has originally possessed something more than age alone to consecrate it, has long ago passed out of the market as an article to be cheaply and haphazardly bartered for. This, on the contrary, seems to be a fact that is anything but generally known, especially to the average American abroad, in whose lack of knowledge of such things lies the security from punishment and the profits of the fraudulent miscellaneous antique dealer. Thus, largely as the result of American demand—a demand that has long outgrown the supply, and which has increased with the disappearance of the genuine antique—such irresistible opportunity and reward

of which are built upon the handle of an old spoon bearing genuine marks; "old" Bristol and Waterford hand-cut crystal, and that particular kind of china which is in most monetary demand—whether it be Oriental blue and white or Lowestoft—abound everywhere in such wholesale lots as one would think should alone serve to excite suspicions of any thoughtful person.

The British Isles have been searched up and down from door to door by experienced collectors for upward of fifty years, and, not being large geographically, the thoroughness of the search shows the remote likelihood of picking up something good for little money at this late day during a few weeks of a summer sojourn abroad.

Beware of buying Robert Burns chairs and Mary Queen of Scots tables, and all such things. It is safe to say that they are spurious. Beware especially of Sheffield



PLAN OF FIRST STORY AS EXECUTED, NEW CUSTOM HOUSE, BALTIMORE, MD.

has been offered the forger that now, thanks to his productive industry, there is both abundance and variety of supply again of "antiques" executed with all degrees of skill and varying from the crude products of amateurs to others of such pretentious workmanship as often to puzzle the connoisseur himself.

Rare old-period furniture, given the gloss and appearance of age by constant rubbing with bone and pumice stone; old hand-rolled copper-plate, which has not been made since 1840, a most favorite article of deception, over 1,000 pieces of which have been lately examined without finding half a dozen genuine specimens; Spanish ivories, skilfully "aged" brown by acids; first-state engravings and prints, Queen Anne silver, superstructures

plate; it is practically all modern, or old pieces plated over, which completely destroys its value as an antique. Buy the new as such at one-half the prices asked for it by the "antique" dealers. Beware also of engravings and prints. Many reproductions of old prints are made by artists of great ability, with no intention at deception. Some of these I have lately seen in antique shops, artfully "aged" and hung in frames, the unscrupulous dealer asking four or five times the price the prints can be purchased for of the publishers. Crystal and china are also made in the old shapes, and often in the actual moulds of a hundred years ago. These are legitimate reproductions. It is the so-called "antique" dealer who buys them up and offers them to the unsophisticated as genuine.

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Interest manifested as to probable attitude of New York Building Code Revision Commission toward reinforced concrete construction.	
Full information as to possibilities and use of material, and opinions of eminent engineers submitted.	
Amount of construction work under way and contemplated in New York as evidenced by plans filed.	
Large appropriations for Federal buildings draw attention to popularity of this form of Government expenditure.	

ILLUSTRATIONS:

The New Baltimore Custom House (8 pages).

Additional:

Gay Street Entrance, New Baltimore Custom House.
Water Street Entrance, New Baltimore Custom House.

MUCH interest, not entirely unmixed with anxiety, is being manifested concerning the manner in which the subject of reinforced concrete will be treated by the Commission now engaged in drafting a New Building Code for the city of New York. The chief cause for this feeling of uneasiness is undoubtedly the scant consideration, amounting practically to rejection, which this form of construction received at the hands of the former Commission on Code Revision. Various explanations of this apparent prejudice, which resulted in undeniable discrimination against reinforced concrete, have been suggested, among them ignorance and misinformation.

WHATEVER other factors may affect the results of the new Commission's deliberations, the activity of cement manufacturers and others has made certain that action will not be taken on the important subject of reinforced concrete construction without at least full knowledge of what might be termed its past achievements. Facts are stubborn things, and when a list of over sixty important reinforced concrete buildings, many of them more than eighty-five feet in height, erected in the metropolitan district within the past few years, is submitted, it would seem that a well-nigh incontrovertible argument in favor of the safety and practicability of the material had been presented. Moreover, expressions of opinion have been obtained from a number

of eminent engineers, and their unqualified endorsement of reinforced concrete construction cannot fail to have much weight with the Commission. In the judgment of these engineers, who have given the subject careful study, and have had wide experience, there is no more reason for restricting the use of reinforced concrete to buildings of certain height or character than there is for placing unheard of restrictions on the use of structural steel. Either can be misused, and the function of a Building Code may properly be considered to consist in providing safeguards against the ignorantly or dishonestly improper use of any structural material, without unjust and reasonless discrimination.

IF the filing of plans was conclusive evidence of the amount of construction work being done in Manhattan there could be derived much satisfaction and encouragement from the statistics furnished by the Building Department; but, unfortunately, under present circumstances, there is strong suspicion that more than a few plans are filed in anticipation of a new Building Code which may offer less advantageous regulations. However, there is every indication that capital is preparing to take advantage of the present unusually favorable conditions to erect many important structures, and gradually the improved situation is becoming more general and apparent. Nor is New York alone in this building revival. Reports from the larger cities throughout the country indicate that construction work for June nearly equaled that of the corresponding month last year. Unquestionably, the depression of a few months since has largely disappeared, and the outlook for the coming year can hardly be considered otherwise than promising.

IT is quite apparent that the construction of Federal buildings will form an item of no mean proportions in the building world during the next few years. Under the Omnibus Public Buildings Bill, which was passed by Congress at the close of its recent session, thirty-four millions of dollars were appropriated for the erection of new buildings. Probably there is no form of Government expenditure more popular than that in connection with the construction of public buildings. Especially is this true since the enactment of the present commendable law which enables the Supervising Architect of the Treasury, under whose direction all Federal buildings are erected, to secure plans for the greater number of the larger buildings from practicing architects, in restricted competition. The gratifying results that have attended the operation of this law have undoubtedly contributed much to the feeling, bordering on enthusiasm, with which the announcement of a new Federal building to be erected in any city is received. The average citizen and taxpayer has learned that under present conditions a Federal building will be of undoubted commercial and artistic value to the city in which it is located, and, moreover, that there will be no mystery or uncertainty as to expenditures and no disappointments as to the final cost. It is true that many alluring features, including the estimate of cost, which are prominent during the early stages of the average municipal building project, are absent, but so also are the later unspeakable concomitants. Few there are, indeed, not enjoying the income from a political appointment, or the favor of those in power, who would not unhesitatingly and vigorously support any measure which would seem to insure placing State and municipal construction work on the high plane that characterizes that of the Federal Government under the present efficient management.

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AND

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No. 1702



PALAZZO DEL PUBBLICO, PERUGIA, ITALY

Color as Applied to Architecture from the Painter's Standpoint

An Address by Professor A. Wallace Rimington, R.B.A.

THIS interesting subject, one that has attracted attention and study by the architectural profession in both this country and in Europe, has been, from the standpoint of the painter, most entertainingly and instructively treated by Professor A. Wallace Rimington, R.B.A., in an address delivered last month at a meeting of the Society of Architects in London, and published in full in the *Architect and Contract Reporter*, in issues of June 12 and 19.

At the outset, Professor Rimington deplors the fact that we live in a period of considerable decay of the color sense; that there is undoubtedly some slight increase of feeling for color in art and as used in decoration among the cultivated classes; but how far this is influenced by the passing waves of fashion it is difficult to determine.

"At the present day it is scarcely too much to assert that large numbers of people are almost absolutely insen-

sible to color; they live in the world without being conscious of the fact that nature is full of beautiful color; it gives them little conscious pleasure, and they never stop to ask themselves how much of the beauty and interest of the externals of life are dependent upon color."

"When we consider the part which color plays in the economy of nature, and especially among animals and insects, and also what an immense source of pleasure in life it may be made to us, it is evident what an important place it ought to hold in art; and in architecture and in painting and other kindred arts it holds one which it is quite impossible to neglect. Whether we care for color or not, whether as artists we have the color faculty, or as architects have trained ourselves to deal with color, it must in every case come into play in every building."

"All materials employed in building have color, and unless we decide to paint our buildings absolutely black

and white, every building must be either a color scheme in itself or part of one in connection with its surroundings. It is certain that the effect of any architectural work, fine in respect of proportion, line or detail, may yet be completely destroyed by bad division of its color mass, by inartistic accentuation of unimportant parts, crude and disagreeable contrasts of color, or an unpleasant general color scheme. On the other hand, harmonious and refined color, even though it may be so delicate as hardly to be perceived as color, may, as we all know, add immensely to the interest and charm of a building, and even to its impressiveness and dignity."

"The whole question of color is surrounded with great difficulties. The condition of public opinion with regard to color is chaotic, and no systematic attempts are being made in the educational world to promote education in color as a necessary part of everyone's intellectual equipment. Many people absolutely dislike strong color, others are totally insensible to delicate schemes. Others, again, are extremely dogmatic as to conventional juxtapositions of color for which there is little artistic warrant, and a still greater number are swayed by every passing wave of fashion. Still there remains a large body who do in a measure care for color and are open to its influences, and it is surely the duty of the artist and of the architect to endeavor to produce works that shall lead the public taste, and not those which pander to uneducated or vulgar opinions. In doing so they will have the consolation of knowing that their work, if sincere, will be appreciated by the cultivated minority of their own profession, and will help forward the higher aims and objects of art."

"Perhaps the principle which of all others I should put first is the great natural one of harmony in color. It seems almost absurd to place such a well-recognized necessity in the forefront, but I venture to think that, although it is often talked about, harmony of color is not such a simple matter as most people suppose. The artist knows well that it is one of the most difficult problems to obtain a satisfactory color-scheme in his work which shall be harmonious, and yet not monotonous. On the other hand, absolute harmony, as in music, is often tantamount to monotony. In a really great harmony there will be a certain element of contrast, some differentiation into partial discord, and some return to an accord."

"How many buildings are ruined by strong and crude contrasts of material or of surface coloring? Nature, if you leave her alone and give her time enough, tends to harmonize the vulgarities of color of almost any building, toning down the sharp contrasts and overlaying the surfaces with lichen or enriching them by oxidation. But we often refuse to learn from her, and go on cutting up our pictures with a patchwork of violently opposed colors and destroying the effect of our buildings by crude contrasts and over-emphasis. Almost all great art tends toward simplicity, though that simplicity is full of variety, and this is exactly what we find in Nature when she is producing her most beautiful effects. All art principles are more or less derived from the study of Nature, and if we endeavor to learn from Nature with regard to this question of harmony we shall find that one of her principles is to build up her large color masses by tints of only slight divergence, and that she is not afraid to pile varying colors of the same general tendency one upon another. She will, for instance, give us a tree of many and various shades of green, or, if it be autumn, of innumerable tints of pale yellow and orange, all combined in the general

effect into one beautiful whole. Or again, she will give us a patch of sea, the general effect of which is an exquisitely deep blue, but which, upon closer examination, we find is built up of a great variety of blues verging toward violet, toward umber, or toward peacock-green. Another fact that we notice in Nature is that, after giving us a long series of extremely harmonious and adjacent colors, she suddenly gives us a slightly discordant note in smaller quantity or mass. This is exactly what we find in the best Oriental decorative art, where a single spot of discordant color is often employed to make the surrounding harmonies still more delightful."

"In speaking of color in connection with architecture, and especially of strong color, it may with a great show of truth be said that the architect has a very limited palette in the exteriors of his buildings, but there is, as a matter of fact, quite as much opportunity for producing beautiful color schemes in tertiaries and grays as there is in the strongest colors of the spectrum band. There are many more or less undefined principles which might be urged with regard to harmony of color, but, after all is said and done, harmony will remain mainly a matter of artistic feeling, and as artistic feeling is capable of cultivation, I would venture to suggest to the architect the study of some of the great masters of harmony in color in the sister art of painting—the works of such painters, for instance, among the old masters, as Titian, Paul Veronese, Luini, Benozzo Gozzoli, and Giorgione; or among the more modern—Turner, Sir Joshua Reynolds, Burne-Jones, Leighton, Waterhouse, Tadema, Albert Goodwin, and others of the living members of our great school of English painters, and especially of our water-color section of it."

"I need not enlarge further upon the subject of harmony—we are all more or less familiar with the need for it in internal architectural decoration—but I would venture to urge that it should be considered still more in the exterior of many buildings, and that, as color is so great an influence, the architect should not quite so frequently remain content with a scheme of external color which shall be so monotonous as to become monotonous."

Professor Rimington further most correctly states, in part, that if a single color is used by itself and without interminglement with others, it will still be more interesting to the eye if it has broken quality instead of being flat. Of course, every architect knows this—the artist is also aware of it, and takes care that his color shall be broken; and he goes further, and is often at the pains to obtain varying degrees of texture in his work so as to avoid monotony of surface.

It is clear that this principle is applicable to architecture. The artist takes no pleasure in a building, otherwise fine in design and proportion, because of its surface and its flatness of color. Its color surface is dead, and this deadness is very largely due in some cases to the absence of texture.

So far we have referred mainly to exteriors of buildings, but in a building this principle also applies to interiors. Here the architect has a much larger range of material at his command; he has paint, stains, gilding, distemper, mosaics—he can provide surfaces of all kinds, and he has wide opportunities for dealing with color. Of course, I know that most architects recognize the fact that quality in color is of importance, and employ it constantly. I would only venture to urge it still more strongly from the painter's point of view. In many cases,

as has been said, what appears to be flat color is really full of inter-contrast. I should, of course, not suggest that flat color should never be used, but in cases where it is used it actually gains by contrast with color in which there is a large amount of inter-contrast and interminglement. How much of the charm of Oriental decoration depends upon this quality, if we think of the decoration of India, or the encrusted decoration, if we may call it so, of countries where mosaics and inlaid stones are used. In no place in Europe can one better study color, perhaps, than in Venice, and there the contrast of texture in color and in quality is extremely delightful, no doubt owing partly to age and to wear, but also to a great extent to definite intention. How beautiful are its decorative schemes in colored marbles and its combinations of brick, marble, and terra-cotta.

Many of you, I dare say, know Sir Lawrence Alma-Tadema's studio in London. I was in it the other day, and I was greatly struck by the extraordinary beauty of the color harmonies, and the care that is taken everywhere to contrast varying qualities and surfaces, and yet to blend them into broad and simple effects of color. One end of his studio consists of a large semicircular apse. Above the dado, which is hung with very beautiful soft-toned mediæval drapery, the wall surface is covered with thin aluminum leaf, put on in such a way as to allow of a certain amount of texture; and, contrasting with this again are highly polished veined marbles of exquisite but varied color. You have, in fact, the painter's feeling for harmony and quality in color translated into the work of the skilled architect.

There is one point which, perhaps, I might refer to here, and that is that, of course, the nearer you are to a color the finer should be the texture in it—the further you are away the coarser it may be or must be. Very often quality in color is completely lost if it is too far from the eye. On the other hand, the painter, of course, demands that those who are looking at his pictures should be a certain distance from them, otherwise there is no possibility of blending the almost discordant tints which he sometimes interweaves in the hope of producing truth and harmony. But projecting the light of this principle upon buildings it would seem to me that it would be advisable to put the roughness of quality higher up in a building than it usually is. The usual course is to have the maximum roughness of quality upon the lower portion of the building, whereas, so far as color is concerned, I think better results would be obtained if the interminglement were coarser in the upper part of the building rather than in the lower.

Bearing in mind that Professor Rimington's remarks are based solely on the viewpoint of the painter, it is interesting to note how skilfully he handles his subject so as to make it intelligible to the architect and to emphasize its application to color as applied to buildings.

The subjects of gradation and contrast, so difficult to master in their correct application in practice are clearly described. He states:

I am aware that the question is complicated by other considerations of apparent strength, and so forth, but I am looking at it solely for the moment from the color point of view. If it be granted that this principle helps us to avoid monotony in color, there is another which to the painter is of great interest, and which he calls "exchange"—I have already briefly referred to it. In Nature we find it everywhere. Whenever we are struck

by a beautiful subject we are almost sure to find that Nature is carrying out her principle of exchange of the masses of color. Take, for instance, some beautiful landscape in which there is a great deal of foliage in the foreground and a blue sky above—let us suppose that the foliage is comparatively warm in color; if we examine it still more closely we shall find that portions of the blue sky are carried down into the foliage and reflected from the glossy surface of the leaves, or we shall find there is some small pool of water, some stone, or something of some kind (if the subject strikes us as beautiful), which is bringing a portion of the blue sky from above into the warm color below, or *vice versa*. Supposing we have a sunset above, we shall again find that the warm color of the sky is carried down or across in smaller quantity into the cool color down below. One often notices also in a landscape in a brown ploughed field, for example, how grateful to the eye is anything carrying down the brilliancy of the white clouds above—for instance, a white horse, a figure in white or gray, or some other object. And if we turn from Nature to the works of the great masters we shall find this great principle carried out constantly. You may say that in no great work of art is it neglected. If there is a large and prominent color mass it is always repeated by the artist in a smaller and lesser quantity, and sometimes again and again, and discordant colors can in the most extraordinary way be harmonized thus. As examples I might refer you to such painters as Rembrandt, Francia, Ghirlandajo, Turner and many others.

I do not say that the painter deliberately works the thing out; I do not say that he always does it from scientific reasons of competition; but he feels it to be a necessity, and he probably feels it to be a necessity because he is so accustomed to seeing it in Nature. In architecture it would appear to me that there is no reason why this should not be carried out further than it often is—though it is no doubt often employed. One knows well, for instance, that the architect when he has a large mass of red repeats it again in smaller quantities elsewhere. But I think that it might be carried still further and studied with advantage by the architect in the works of many painters. Perhaps I might again refer to Venice as being the place of all others which I know in which the principle is carried out. I have also noticed it in many of the Spanish buildings, especially those in the south of Spain.

The principle of exchange is especially of value, I think, when using strong color. For my own part I do not see why strong color as well as delicate and refined color should not be more frequently used in architecture. As a matter of fact, strong color can be as refined as delicate color if it is used properly—the artist knows this. How delightful is the strong color of an old sunburnt chalet in the Tyrol or that of some buildings in Russia and Holland and other parts of Northern Europe. Science is constantly giving us new materials, new building materials, and she puts at the disposal of the architect a greatly enlarged scale of color, and I think that this question of color in architecture is becoming more and more important every day. Leaving the principle of exchange, let us pass on to what the painter knows as gradation and focusing. There is no doubt a kind of painting in which flat tints predominate, and there is decorative work of various kinds in which tints which appear flat are valuable—even though they contain "quality"; but in the work of the painter as a rule gradation, as in Nature, plays a most important part. And it is extraordinary to find when you

are working out a picture how often a color proves unsatisfactory solely because it is ungradated. Gradation, of course, like inter-contrast, introduces an element of mystery, an element of infinity, which again is a reflection of what we so constantly feel in Nature. In architecture this principle of gradation in color certainly can often be carried out with great advantage in internal decoration. Perhaps one of the causes of the charm of a circular recess such as that I was describing just now in Alma-Tadema's studio is that the color, in consequence of the varying lighting inside the recess becomes graduated and therefore more beautiful. There are several buildings in Italy which come to my mind in which there is a tendency to graduate the color upwards—ferol cool color into warm or, *vice versa*, from warm color into cool, through various tints of marble, gray, pink, salmon color to terra-cotta and brick, and so forth, and some of these buildings have struck me as extremely beautiful.

Leonardo da Vinci thought painters might learn a great deal from the discolorations upon an old wall as suggesting figure designs to them, and I think that architects may perhaps also learn something from the study of some of the accidental gradations and methods of using color which Nature is constantly employing. In a roof, for example, one often finds that Nature has been at pains to graduate the color, that she has much more color on the top of the roof than at the bottom, or that she has graduated towards some particular point. Well, I fail to see why the architect should not indulge in the same kind of gradation. If you have gradation in a picture it very often culminates, as it does in Nature, in what the artist knows as a focus—that is to say, one point or portion of light, or of dark, which is the climax. This gives coherence and unity, and the principle being a valuable one, and constantly used by the painter, surely ought also to be of some use to the architect. With large surfaces, some portions of which are gradated, if a point of color or of dark were used as a focus at the right place one cannot help thinking it might be used with very great effect. In the dark depths of a Moorish arch the Moorish architect will often place a deep scarlet spot of decorative color.

Leaving this question of gradation, let us pass on to that of contrast. Contrast, we all know, is of the utmost importance in literature; it is used at every turn. Without contrast in painting it is impossible to express light, almost impossible to express color in its full force. Yet how dangerous, how extremely sharp-edged a tool contrast is, how liable to lead the artist into excess and vulgarity in effect. We may say it is the stamp of the bad artist to use contrast at every turn; it is so easy, such a tempting thing to do. But though it is so difficult to use contrast well, it is of the utmost importance to an artistic instrument; and therefore the whole question of contrast requires careful study on the part of the painter, and ought, I think, to be studied with the greatest care by the architect. In a good picture a painter, as a rule, uses strong contrast only once or twice, perhaps even not at all; but although he only uses strong, powerful contrast sparingly, contrast is interwoven all through his picture, both in the color and in the light and shade, but it is of a refined and artistic kind. In any given color which is full of quality, intermingling, of which we have spoken, is really an inter-contrast between warm and cool color so carefully adjusted as to give a tendency either towards a warm or cool tint as the artist desires. I need hardly remind this audience how many buildings are spoilt by

over-contrast. How our eyes are pained by blue slates and red bricks, and the admixture of colored bricks in the fronts of buildings without sufficient artistic feeling. I should say that those buildings in which contrast of color will be of most advantage will be those in which there is a tendency to monotony in light and shade or in line and form. There contrast in color would do much to break up the monotony of the building and render it more interesting.

Passing from that question, I propose to touch upon one other only, and that is the question of color in relation to the high lights of any object. If you have a colored object, an object which is producing color, that color of course is only the result of the absorption of certain colored rays by the object and the return of certain others which it does not absorb, and it would seem that any colored object only has the power of absorbing a certain quantity of rays. If it obtains more light than it can split up into its constituents it returns that white light as white light, and the result is that the color which it is giving back is diluted. If you take a red rose or a piece of folded drapery in which there is no variation of the local color, the strong color is in the half tones, not in the lights. The common painter who has not a very sensitive eye nearly always puts the strong color in the lights and not in the half tones, or, at any rate, he does not maintain the right relationship between the high lights and the half tones. And that may be not because in some instances he does not wish to do so, but because pigments will not enable him to do so. It is extremely difficult to get the right relationships of color in painting, and relationships or proportionate values are, as I need not say, of the utmost possible importance everywhere in art. In color they are of supreme importance, and therefore the really fine artist, if he cannot make his half tones strong enough, sacrifices his lights, and in order to do so he follows this law of Nature that the lights are always relatively pale or gray compared to the half tones. If we turn to the work of really fine colorists we find this principle carried out in a very marked way. In very early Greek work (we have a few examples still existing) we find that with their sensitive feeling for art they at once detected this, and even there the lights in their frescoes are but faintly stained. If we attempt to apply this to architecture, as I think we may, perhaps we may draw two or three deductions. Where we have a natural mass of half tone, as, for instance, in the hollows of recessed mouldings, we should not interfere with it; we should be careful rather to keep it rich; otherwise we should be falsifying one of Nature's principles of coloring which would probably be unpleasant to the majority of us. Again and again one sees beautiful ornament entirely destroyed by the color which has been used emphasizing it in the wrong place. And there is another curious thing which comes into play with color in a recess in architecture which I think of interest—namely, that when the light is fairly strong you notice that there is an extraordinary reverberation of color in the hollows which greatly increase its richness, and that effect is specially delightful when you see a building under reflected sunlight. Perhaps we might help to produce that effect artificially by supplying the enrichment artificially, and giving a large amount of quality to the color of the recesses of ornament in architectural sculpture. On the other hand, how pleasant is the effect produced by wiping off the high lights in carved work which has been painted or stained. You will find

the principle of the enrichment of half tones observed by the architects of much of the brick and terra-cotta architecture of Italy where the strongest colors are put in those places where they are most likely to be in partial shade, and where there is more opportunity of enriching the tones, especially in the districts of Milan, Brescia and Pavia. I have also observed it in some Good German work of the Early Renaissance period. Observance of this principle, as I think I suggested before, enables us to deal much more easily with strong color, and on this account it may be of service to the architect to have it in mind.

I have throughout this paper assumed that it is admitted that one of the duties of architecture is to be beautiful, and I cannot help thinking as an artist that it ought not to be merely utilitarian. The tendency to-day is to look at most things from the utilitarian point of view, and in literature as in art, or I should say in art as in literature, I am afraid there is also a tendency to prefer the ugly as being more impressive than the beautiful. Yet, for my

own part, I can only say it is my firm belief that if this tendency gains ground to such an extent as to become universally adopted, not only is art doomed, but civilization is doomed too, and therefore I cannot admit that it is not the duty of the painter to make his pictures beautiful and only to make them impressive, any more than as an outsider I can admit that it should be the function of the architect to make his buildings impressive or merely utilitarian and not beautiful."

In concluding his address Professor Rimington very aptly states that architecture at the present day is in competition with much more in the world than it has been before. All kinds of things are competing with the interest that architecture once aroused in men's minds.

Our teeming literature takes time to assimilate; our lives are too full, and many men have no time to appreciate architecture as they once had; perhaps this question of color as applied to architecture becomes of increasing importance if architecture as an art is to hold its own.

The Principles of the Business Management of Office Practice of Architects*.

There are two important branches of this theme, both of which should be the subject of careful study as a necessary preparation for establishing a peaceful, profitable practice in architecture. Neither branch is in a complete state of exact information, consequently judgment and experience, after learning the fundamental principles of them, must be one's guide in avoiding the ill results with which their misunderstanding may be attended. These two branches are: Architectural jurisprudence; office systems and organization. I can say but a few words on the first of these, as there is not time to go clearly into the subject, before taking up the principles of office systems, which latter I have come here for the purpose of directing your attention to.

What the status is of an architect in the community is an unsettled, vexatious question. The opinions of courts classify him, from a follower of a mercantile trade with customers, to a practitioner of a liberal profession with clients. All judicial opinions, however, regard the architect as the head of all persons engaged in the building trade, and expect of him high skill in designing, great care in conducting operations, and the highest good faith towards all parties. His relation to the owner is generally that of agent to a principal, but it is not purely such, as the condition of a trust also exists, for in performing his duties, his acts are of two distinct capacities—ministerial and quasi-judicial. His acts in the latter capacity, which involve considerable discretion, are held to be acts of trust; this you must bear in mind, for it is a rule that acts of trust cannot be delegated to third parties, but must be performed in person. The architect's quasi-judicial act is an exercise of his professional opinion and judgment, and in such exercise he is accorded by the courts the same protection as a judge, that is to say, he cannot be called to answer for such before any judicial tribunal, presuming, of course, that his act was one of good faith.

As an example of quasi-judicial functions, I would mention the usual provision that the contractor's right to payment is made dependent upon the architect's approval of his work; that is a wide power and one in which the architect's decision is final. As an example of ministerial functions I would mention the furnishing of contractor's with drawings and instructions by which to work. You will realize that if the architect fails in any respect to furnish contractors with information necessary for prosecuting work, he fails in a ministerial function for which he is liable and he cannot successfully place the burden of default on the contractor through exercising his quasi-judicial functions of refusing a certificate of payment, because the work is not at a condition to receive his approval. He must right his own wrong and help the contractor if he would avoid censure from client and court.

These few preliminary remarks will serve to indicate to you the necessity of an architect's having some knowledge of architectural jurisprudence. If you desire to pursue the subject further, you will find many works on it in the Columbia Library, and many articles on it in the files of architectural magazines. I refer you to the following books: T. M. Clark, "Architect, Owner and Builder Before the Law;" A. C. R. Emden, "Law Relating to Buildings;" A. P. Lloyd, "Treatise on the Law of Buildings;" J. A. Strahan, "Legal Position of Architects as to Certificates;" T. M. White, "Recent Legal Decisions Affecting Architects."

Now as to office systems and organizations. System and organization are the mechanism of profitable practice. System makes possible effective expedition in office work. Organization is the medium for applying the labor of the office economically. No practice may be conducted without begetting some amount of record. The reasonable multiplication of correlated record is a necessary safeguard against falling into a wasteful contentious practice. Standardizing and systematizing all matter entering into record capable of being reduced to

* An address to the Upper Classmen of the School of Architecture, Department of Fine Arts, of Columbia University, April 28, 1908, by H. S. Kissam, a graduate of the Department.

and conducted under uniform forms of uniform sizes is to establish system. Forms are the elements of system. An office organization has two branches, the executive and the productive. The executive is many things, but with respect to the productive branch it is preeminently the motive force for good organization, leading to attaining efficient action, checking against faulty or wasteful action. The productive branch naturally divides itself into three general departments bound to each other by the executive. These are: the drafting department, concerned with designing buildings, making working drawings, furnishing printed copies of drawings; the specification department, concerned with writing specifications, taking estimates, letting contracts and having charge of catalogues and samples; the construction department, concerned with having work executed, certifying to payments and closing contracts. It is common in large offices to organize an accounting department under the executive branch, with a subdivision having charge of records, files and supplies; then a ledger is kept having an account with each division and with the office in order to segregate the cost of each, and to enable keeping costs of each piece of work other than by approximations. Such are the well-known divisions of office organization. I name them in detail because they must all be kept consciously in mind in devising forms for conducting the activities of any one of them; they are inter-related in so many respects. Further, it is most important that all forms should be devised with the view that the executive is to be the uniting link for connecting the activities of each division to each of the others.

Now to take up forms of systems in order of usefulness for a usual case of uneventful successful progress. The first set would of course relate to being engaged to do work. The second set would relate to initiating work. The third set would relate to carrying work to the stage of awarding a contract. The fourth set would relate to having the work conducted and concluded. It would be impossible to give you sufficient information of the forms of each of these four steps in a short talk and it would be but of small help to you to give you copies of models of them, without also giving you directions concerning their uses. I will, however, show you copies of some of them, explain in sequence something of the purpose of the forms for these four simple conditions, and leave you to extend your information through obtaining from firms well known for their office systems, whom I will recommend to you, copies of the forms they use.

Should your time and instructors approve, I suggest you confer with the committee on employment and office practice of the Society of Columbia University Architects, for cooperation in achieving the minimum number, or indispensable set of model forms suitable for a moderate sized practice. The first and most important form is form in letter writing. Make the contents of your letter terse, clear and courteous; let no matter escape being written of promptly; confirm all conversations and messages by letter; acquaint all interested parties with each matter, as it arises, your disposal of which they have interest in. The next important general form is in the use of numbers, labelling names, or of letters of the alphabet, for the segregation of matter. As a beginning, give a number to each piece of work you undertake and number work consecutively. Correspondence

is best filed by keeping all letters alphabetically arranged, in cabinets of boxes, each box labelled with the number of the piece of work the letters in it refer to. Place a carbon copy of each of your letters with the letter it answers or which answers it. Vertical cabinet files consisting of drawers into each of which the correspondence of a group of buildings is kept are coming now into common use. Index your correspondence by name and by the number of the piece of work it is concerned with in a card catalogue drawer with the cards arranged alphabetically; enter on each card the writer's name and address a card to each name, and the name and the number of the piece of work he is concerned with. This links your correspondence to your work, for the set of indexes, one by name, the other by number and name of building, completes a cross reference. This brings us to the consideration of the usual forms of the four stages of work, which I enumerated. It should be borne in mind that a division into four stages is for the purpose of logical presentation through mentioning them at a time when they first come into usefulness, and that most of them continue to have application in one or more of the steps following the introduction.

The common forms of set one, relating to being engaged to do work, are: Slip for name and business of callers; postal forms for asking or making engagements; memorandum blank for recording messages over the 'phone; schedule of fees charged; form of agreement between architect and client; correspondence files; card catalogue of correspondence; information book or memorandum record of instructions and talks; record of calls and visits; date, hour, name, asked for, saw, said.

The common forms of set two of initiating work are: Card catalogue of clients; form for ratifying instructions; form of recording expenses; form of drafting time sheets; form confirming approval and acceptance of studies; form for approval of clauses of specifications, of contract and approval of list of bidders; office order for preparation of drawings or specifications; record of orders of blue prints; form of bookkeeping account with clients; form of bill for services; card catalogue, receipts for things sent out (for comment or for work); posting book of things issued and things received. Of the foregoing forms, all, except schedule of fees charged, form of agreement, etc., and form for approval of clauses of specifications, etc., are used throughout.

The common forms of set three of carrying work to the stage of awarding a contract are: General conditions for specifications; forms of specification (sheet size, binding, arrangement of contents); card catalogue of bidders (indexed by trades); postal form inviting a call for estimating; proposal; estimates record sheets; acceptance of proposal; postal notification of award of contract; card catalogue of work under contract (indexed by name of project); schedule of unit prices; contract; bond; labels for models and samples.

The common forms of set four of having work conducted and concluded are: Superintendent's daily report; shop work inspection reports; reports of tests of materials; ledger account with contractor, or a contract account, folding cover; blanks for contractors to make statement of changes; order of extras; order for omissions; order for special work not measured by unit prices; changes record sheet; requisition or application for payment; certificate of payment; voucher of payment; contractor's affidavit of amounts he owes subs;

sub-contractor's affidavit of amount contractor owes him; waiver of lien; notice of discharge of bond.

(To be continued.)

ILLUSTRATIONS

A New Type of Fire House

THE new fire house recently completed at No. 232-234 W. 63rd street, for the Fire Department of the City of New York, illustrated in this number, is a new type of fire house as adopted by the department.

In designing the facade of the building the needs of the fire apparatus required openings not only in fixed positions but of given widths and heights, the problem thus actually resolving itself into a facade designed around a number of openings. The two part composition so often employed in this class of work has been discarded, and Werner & Windolph, the architects for the building, have adopted a three part composition, using a heavy rusticated brick base or first story with a lighter treatment of brick pilasters in the upper stories.

The brick work of the first story is started upon a heavy Milford granite water table, with a strong Indiana limestone belt course separating the first and upper stories. Cut limestone trimmings accentuate the openings, and a strong limestone cornice with brick balustrade crowns the composition. Emphasis has been given the second story or Belle etage in the capping of the windows with rusticated limestone keys and pediments.

The building is planned so that the apparatus for fire purposes and the horses quarters are located in the first story, the second story is used as a dormitory, while the third story is used as a recreation room and gymnasium for the men when not on duty. The cellar serves as a storage place for steam plant, coal storage, etc.

The constantly increasing population, the many new high buildings and the ever increasing cost of land and construction has been a problem which the authorities have had to contend with from time to time. To locate fire houses closely, in order to meet these conditions, would cost millions, and the late Commissioner Bonner, after carefully studying the problem, suggested that if the wasted and unoccupied space in the cellars of the fire houses, located in congested centres, were used for the storage of engines and other fire apparatus a great saving would be made and further, in the case of great conflagrations, would bring many engines together without drawing upon the Fire Department of the entire city. The fire house selected for this experiment was the West 63rd Street Fire House, known as No. 35 Hook and Ladder Company; here the cellar was excavated to a depth sufficient to allow proper headroom, and planned for the storage of from six to eight engines, which could be raised to the first story by means of an elevator.

There were two important considerations in the construction of this elevator; first, that the elevator should not be an obstruction on the first story where the fire apparatus is to be stored; and second, that the elevator should be of a capacity to easily carry the load as required in as short a time as possible and with safety. As to the first consideration it was necessary to design the elevator so that the platform when not in use would

allow the use of the entire first story, which would require a two-platform elevator, arranged so that when the floor of the car was at the cellar level, the platform would be at the first floor level, the platform being supported in the frame work of the car, in other words it was necessary to construct a two-platform sidewalk type of elevator. The second consideration as to load (5 tons) and speed, required a special extra heavy type of elevator, which could easily lift the load and run at a fairly fast speed without danger. It was finally decided to speed the elevator at 12 feet per minute, using electricity as a motive power. In the construction of the various parts of the electric machinery, all parts were specially designed and cast of extra heavy steel castings. The elevator was tested at completion and found to operate satisfactorily, and required 55 seconds to carry an engine from the level of the cellar to the first story.

Briefly, it was the idea of that eminent fire fighter, Bonner, with the aid of Chief Croker, to equip this building primarily from the standpoint of efficiency.

The New Stapleton Ferry Terminal

SNELLING & POTTER, ARCHITECTS.

THIS structure is being erected at Stapleton, Staten Island, New York City, to provide terminal facilities for the New York Municipal Ferry. The terminal as originally designed was for two slips, a recreation pier and an approach. But one slip is being erected—the approach and recreation pier have, from motives of economy, been omitted. The building as at present designed is, therefore, somewhat unsymmetrical in appearance. The large waiting-room is the main interior feature. The structural steel work of the interior is left exposed and treated in an ornamental manner somewhat along the lines of similar work in the Grand Palais at the recent Paris Exhibition. The side walls are to be finished in imitation Caen stone. The main floor of the waiting-room is on a level with the lower decks of the boats, while the gallery of the waiting-room leads to the upper decks. The entire structure is built on wooden piles, and the foundation has four large corner piers, each resting on 48 piles.

The main floor is constructed of reinforced concrete girders and slabs. The reinforcing is effected by the use of plain round rods, the system employed being that of Monier, the original inventor of reinforced concrete, but slightly modified. The engineering work was done in the office of the architects and not left to the reinforced concrete companies called upon to figure on the work.

The main façade shows the central motive of the large waiting-room, with one ferry entrance flanking it. An effort has been made to express the interior arrangement of the plan in the façade, the central motive representing the waiting-room and the large circular trusses spanning the room repeating themselves in the exterior treatment.

The two large pylons are in terra cotta. In the rear the steel work supporting the covering of the galleys frame used to raise and lower the bridge, while strictly structural, is treated in an ornamental way.

The combination light and bell tower illustrated has a large wooden sounding board placed behind the bell. This tower is made an important decorative feature.

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- Ferry Terminal, Stapleton, Staten Island, New York,
N. Y. (3 pages).
- Fire Engine House at 232 W. 63d St., New York, N. Y.
(2 pages).
- Building for Daggett & Ramsdell, 314 W. 14th St., New
York, N. Y. (3 pages).

Additional:

- Court and Stairway of a house at Nuremberg, Bavaria.
- Francis I. Stairway, Chateau de Chambord, near Blois,
France.

WHETHER, on the whole, architectural competitions are productive of more good than evil is perhaps a debatable question, but certainly there appears to be at least a strong likelihood of their indefinite continuance in some form or other. The thought of having the plans and ideas of a number of architects to make selection from with trifling or no expense cannot be said to appear unattractive to the average owner. Among other advantages, it no doubt seems to him in great measure to preclude the possibility of his failing to make the most of the opportunities and work in hand. If the best solutions occurring to a half-dozen or more competitors are carefully considered, the owner feels that he can select the one most strongly commending itself and be reasonably sure that he has made the most of the conditions. He does not, of course, consider very seriously the position of the unsuccessful competitors. Their plans were not accepted, so why should he pay for them? It is probably true that they assisted him in coming to a decision, and, perhaps, even suggested ideas he is glad to keep in mind, but the

architects were perfectly willing, in fact, anxious, to submit designs, and the owner is not in the habit of concerning himself particularly with questions of professional ethics, or even with those relating to the justice of accepting something for nothing, when the donor insists on making the gift.

THE foregoing presents, perhaps imperfectly, the attitude of many owners; but it has been urged by others that competitions offer practically the only means by which young and necessarily obscure architects, be they ever so gifted, can hope to attract attention and the commissions that may be expected to follow as a sequel. Then, in the case of public work, the competition provides a means of awarding commissions with an appearance, at least to the casual observer, of impartiality. In any event, it would seem that there were reasons of sufficient potency to warrant the belief that, fortunately or otherwise, competitions will probably furnish a topic of perennial interest to architects in convention and out of it for many years to come.

IF then competitions can be considered in the nature of a permanent institution, it behooves us to do whatever is possible in the way of so ordering and regulating their conduct that the greatest good and the minimum of loss and disappointment will result. It must be admitted that to be of the greatest value, in fact, in the broadest sense, to be permissible at all, competitions must be conducted in the interest of both the public and the profession. Otherwise they will become intolerable. If this is fully understood and conceded, the devising of ways and means whereby mutual interests could be best served should not prove an impossible task. A requisite, however, of first importance in any plan of competition, in order even to test its merits, is loyalty in the profession after authoritative pronouncement on the subject has been made. In the past this quality has not been particularly prominent. Recently some of our ablest architects have shown a lack of loyalty to their colleagues, which is much to be regretted. If this attitude was persisted in, it would undeniably prove fatal to the most faultless plan conceivable.

NOT infrequently during the past year articles have appeared in the technical press decrying modern architecture and comparing it, to its great disadvantage, with the architecture of the ancients. That the architecture of our day suffers by a comparison with that of ancient Greece no one will deny, but is it entirely fair to compare work done under such totally different conditions? It has been finely said that both the architect and his work are the product of their age. If there is no public sentiment for, or appreciation of, beautiful buildings and harmonious surroundings there is little hope that our architecture will flourish and improve. The incomparable architecture of the past was hardly achieved in defiance of an unappreciative or unsympathetic people. Strictest economy and greatest utility have too long been the controlling factors in designing and building our modern structures, and until communities in general become possessed with the spirit of the ancients that complained not at the cost either in time or money, but demanded only that the most beautiful buildings be produced, may we hope to approach the architecture of old.

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THE CITY HALL, NEW YORK, N. Y.

John McComb, Jr., Architect

By EDWARD S. WILDE

THE attention of the writer has been drawn to certain recent publications upon the subject of who was the real architect of the present New York City Hall. These publications comprise, notably, an article in the May number of the *Architectural Record*, and another of like tenor in the *New York Evening Sun* of May 9 last, both presumably by the same author or inspired from the same source, each endeavoring to build up a claim that a surveyor and draughtsman, Joseph Mangin by name, and not John McComb, Jr., designed the drawings from which the Hall was built.

It is the object of this writing to traverse this claim.

Forty-odd years ago the subscriber married Miss Helen A. McComb, a granddaughter of the architect. After the death of her father, Mrs. Wilde became possessed of a great part of the architectural library and drawings of her grandfather, and, some ten years back, about all of the latter that remained relating to the Hall, with many of a

miscellaneous character, were made over to the New York Historical Society, but it is only recently that these have been classified and indexed.

The insinuations, emanating from the article above referred to, are, by themselves, of no consequence whatever to Mr. McComb's family, but it is of consequence that the memory of a man, dead these many years, a man, too, of the standing and attainments of this accomplished gentleman, should be attacked.

Let us, then, take up, as much in sequence and as briefly as possible, the social conditions as they existed here in that interesting period following the termination of our Revolutionary War as applied to the opportunities afforded for the development of architecture and the acquirements of professional training to fit a young man to attain success, and, in a way, to accomplish this, trace out Mr. McComb's career from his boyhood.

A state of war and the formation of a new government

had brought to the fore the names of many illustrious men, and when peace was restored and the social relations of the people were remoulded a broad field was opened for other victories than those of war, and it was the prescience of the fathers of that day that prepared many of their sons to take leading place in the race of future material development, and so it was in this case of father and son.

So far as New York is concerned, the first we know of the father, by inspection of records, is that on January 3, 1769, he became a freeman of the City of New York—occupation, brick-layer; that on January 2, 1771, p. 254, Minutes of the Common Council of the City of New York, his account of "£3:15:10½, for paving at the end of the Coffy house Bridge and for paving stone and sand was audited by the Committee and allowed"; that in 1772 he purchased a property on the north side of Tienhoven Street. This name was derived from a Dutch patronymic with the Van left off, and had been anglicized into Shinehoven or Shienhoven—the price was £325, a rather considerable sum for those days, but, when nineteen years later, in

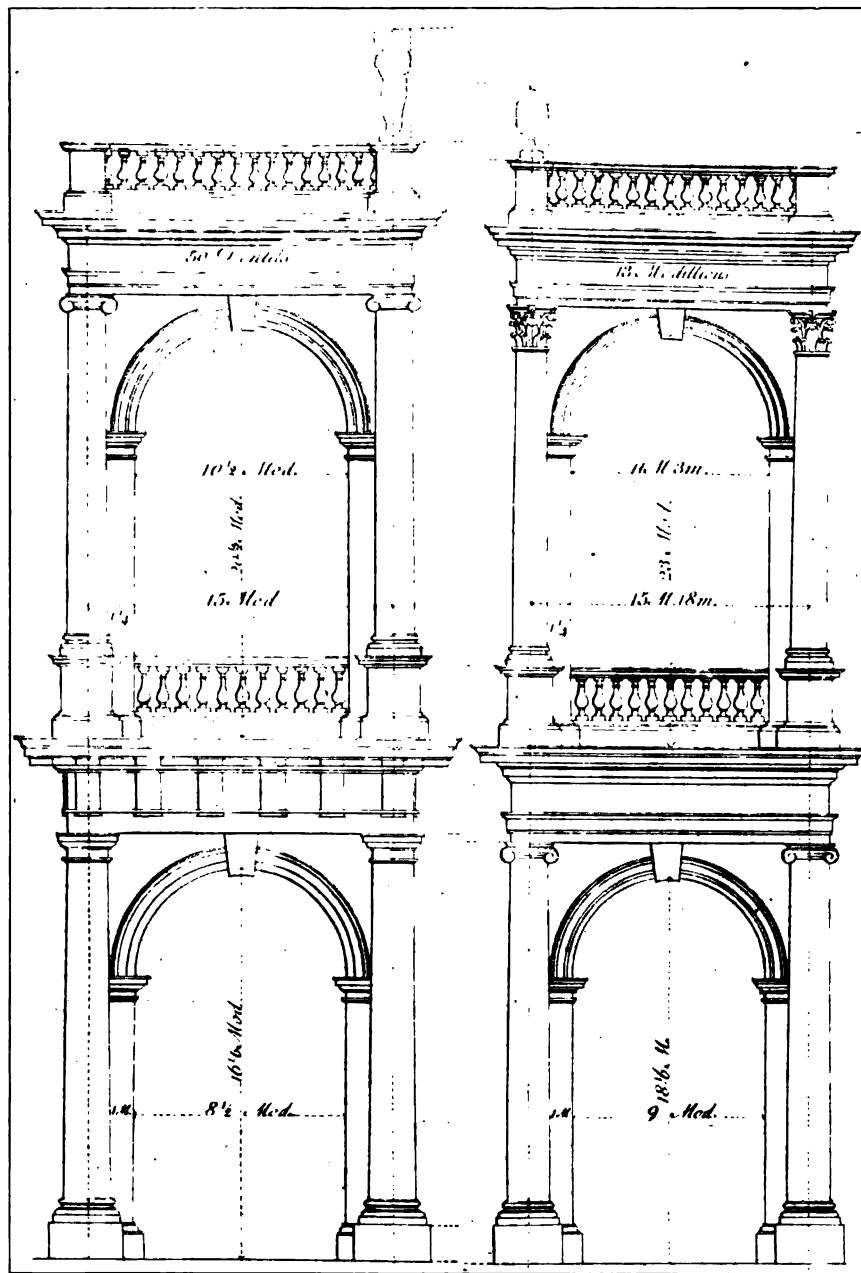
1791, he came to dispose of it, the sale was for £500, and the property was known as 41 King Street—now, in our day, called Pine street.

By record again, in 1786, we find the father a member of the "General Society of Mechanics and Tradesmen of the City of New York." This society, now located at 18 West Forty-fourth Street, had been instituted August 4, 1785, but was not incorporated until March 14, 1792, when both father and son were charter members.

Reference to the manuscript minutes of the society show that, from 1787 to 1791, inclusive, John McComb,

Sr., was its Secretary. It also appears by the record that during these same years, with four years to be added, to wit., from March 16, 1784 to 1792, this same John McComb, Sr., was "City Surveyor" of the City of New York, residing at 41 King Street.

"Note that the City Surveyor was necessarily a technically educated man." This is quoted from the *Architectural Record*, p. 388.



FROM A TREATISE ON THE DECORATIVE PART OF CIVIL ARCHITECTURE, BY SIR WILLIAM CHAMBERS, LONDON, 1791.

Reference to the manuscript minutes of the above society, as well as to surveys made and plotted by McComb, Sr., that are of record, will, in this case, bear out the truth of the quotation. Still, in 1772, when he took title to the King Street property, it was as a "mason."

In 1785, September 17, he had been appointed returning officer—Judge of Election—to preside at the coming election for city officers at the City Hall, the polling place for the North Ward. In the same year, September 23, he had been "appointed on the part of the Board to appraise the injury to Isaac Clawson's Lott and also the Lott of Leonard Kip," on Greenwich Street. In 1787 he, with Daniel Niven, received from the city a grant of 190 feet extending into the

North River and opposite to lots belonging to the estate of Sir Peter Warren, deceased, who gave the name to Warren Street.

In 1791 he purchased a farm of 128 acres, 40 miles out in New Jersey, where he went to reside late in the following year and where he ended his days in 1811 in his seventy-seventh year. His removal to New Jersey was synchronal with ceasing to be secretary to the Mechanic Society and a city surveyor as well.

His coming to New York when a young man of twenty-four or five was from Maryland, where his father—the

grandfather of the architect—had first settled upon arrival from Scotland, which country, as a Covenanter of the strictest sort, he had found it expedient to leave, and although belonging to a family of prominence and of means, whether then remaining endowed with earthly possessions to any considerable amount must be left to conjecture, certain it is, however, he came liberally enriched with the education of that day and the Scottish pride which disregards conventions, save such as should soonest lead to rehabilitation of broken fortune, and this son was brought up in the practical way he should go—an educated mechanic of the first order. Practically, he had a profession, the kind that would pay best, the canny Scot, and eventually it did.

We have seen that in 1772 the Senior New York McComb resided at 41 King Street. His oldest child, John, who was to be the architect of the City Hall, was then nine years old, having been born in this city October 17, 1763. There were two other children of more tender years.

Upon the beginning of active hostilities the father, wife and children removed to Princeton, New Jersey, returning to New York at the dawn of peace. While living at Princeton young John became a good Latin scholar, attained a proficient use of the French language, and excelled in mathematics. The young man's career was then mapped out, for during this time and later on in New York we have proof of his application in the many practice designs that still exist. These show a constant advance until, by direction of the State Commissioners, designed the façade of the Government House executed in 1790 upon the site of the present house. He was then twenty-seven years old. The building was "demolished" in 1815. No

and historian," recalling the vivid impressions of youth, may remember it. The block whereon this fine old mansion stood "was laid out in lots by John McComb (Junr.), Street Commissioner, and the lots sold for the Corporation." Father and son lived together at 41 King Street until the former retired to New Jersey, when the latter for several years lived at No. 1 Nassau Street. Here he remained until he moved uptown and thence to Bow-

ery Hill, where he resided for many years. He sold his former residence, No. 1 Nassau Street, in 1815 for five thousand dollars.

Prior to 1803 he executed many important public and private works. In 1792 he, with William Pers, built the lighthouse on Cape Henry. In 1795 he designed and built the Montauk Point lighthouse, and in 1798 that on Etons Neck. His collection of books on

architecture, prompted by an active practice, had at this time become considerable. He was a member of the New York Society Library, founded in 1754 and now located in University Place—the oldest and most exclusive in the city—he also had access to whatever was of interest to his profession that then existed in New York.

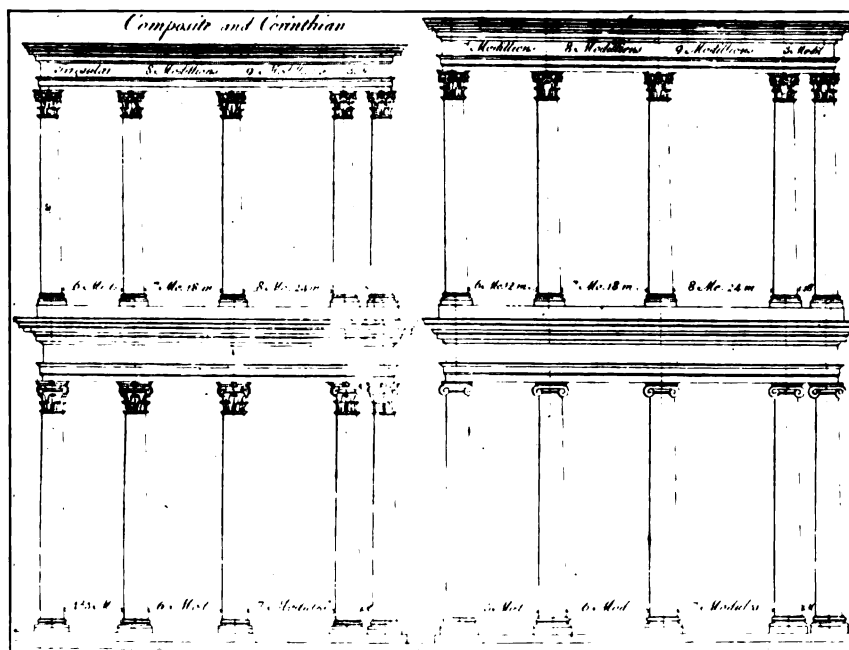
Among the books of his library that remain, is a copy of "A Treatise on the Decorative Part of Civil Architecture," by Sir William Chambers, K. P. S., F. R. S., etc., etc., Third Edition, London, 1791.

This remarkable work had been in Mr. McComb's possession several years prior to the inception of a new City Hall, and beyond doubt exhibited the very best results of Anglican

architecture. His edition is now rare. In 1825 Joseph F.S.A., published a later edition from ill-executed plates, in two volumes, a copy to be found in the Astor Library. Later editions are not good, the plates



FROM A TREATISE ON THE DECORATIVE PART OF CIVIL ARCHITECTURE, BY SIR WILLIAM CHAMBERS, LONDON, 1791.



FROM A TREATISE ON THE DECORATIVE PART OF CIVIL ARCHITECTURE, BY SIR WILLIAM CHAMBERS, LONDON, 1791.

being very badly worn. Mr. McComb's copy of the third edition was, however, an early impression and the plates are now nearly as sharp and clear as ever.

Within the front cover of this book is pasted a slip in the handwriting of Mr. McComb containing page references to those parts to which he referred his draughtsmen in designing the City Hall.

Some of these possible to reproduce are given here:

The first we find of record or know of Mr. Mangin appears in the minutes of the Common Council of February 22, 1796, indexed, "Project to Make Basin at Collect," and reading as follows:

"A Project or Proposal of Mon^r. Mainshin—Mangin written over—& Brother Engineers, for making a Dock or Basin in the low Grounds at the fresh Water Pond as a safe Harbor for Shipping & to drain and carry off the Water from that Quarter into the Rivers; was read & ordered to be taken into consideration with the subject of the Contemplated Canal from the fresh Water Pond into Hudsons River."

May 9, 1796.

"Joseph Francois Mangin, Engineer admitted & Sworn Free Man of this City."

May 16, 1796.

"Ordered that Joseph Francois Mangin be appointed a Surveyor of this city."

July 11, 1796.

"The Mayor mentioned to the Board a proposal of Mr. Mangin to make a general survey & Plan of all the streets in this City, which was referred to the Street Commissioner to confer with him on the subject."

November 13, 1797.

"The street committee on the subject of the proposals of Mess^{rs}. Mangin and Goerck, City surveyors for the making of a survey of all the streets of this City reported that Mess^{rs}. Mangin and Goerck would undertake the business on certain terms mentioned by the Committee to which the Board acceded and Mr. Recorder was requested to aid the Committee in drawing the articles of contract."

December 11, 1797.

"Mr. Recorder presented to the Board a draft of articles of agreement between this Board and Mess^{rs}. Goerck & Mangin for the making of a survey and map of this City with all the streets and water lots, which was read and approved by the Board and the common seal was ordered to be affixed to one part thereof on the other Partys executing the other part."

December 3, 1798.

"A Letter from Mr. Mangin one of the City surveyors on the subject of the Contract entered into by him and Mr. Goerck, *dec'd*, to make a survey and map of this City was read and referred to the street committee."

December 17, 1798.

"A Letter from Mr. Mangin one of the City surveyors was read relative to a demand made on him by Mr. Loss the engineer surveyor of the use of the unfinished survey & Plan of this City which he and Mr. Goerck, *dec'd*, contracted to make for the use of this Board, which demand the Board considered improper. But directed that Mr. Loss be allowed the use of the survey and Maps in the clerks office of the water Lots on the East and Hudsons Rivers."

February 4, 1799.

"A Letter from Mr. Mangin surveyor on the subject of the Contract to make a survey and map of this City was read and referred, Ald^m. G. Furman and De La Montagnie."

April 15/10, 1799.

"Mr. Mayor laid before the Board the New Map made by Mr. Mangin: which was committed Ald^m. R. Furman, G. Furman & De La Montagnie to examine & correct as to the names of the streets, and also to report a mode for obtaining subscriptions to the work. Mr. Mayor represented to the Board that Mr. Mangin requested further advance of money. But as the state of his acct. against the Board could not be immediately known Mr. Mayor suggested the lending of him \$200 on his note payable in six months, which was agreed to by the Board."

July 15, 1799.

"Mangin Map ordered to be engraved by Mr. Maverick or other competent engraver."

December 12, 1799.

"Ordered that the subscription monies collected for Mangin's New Map of the City be paid to the street commissioners who are authorized to advance him \$100 on his note."

November 30, 1801.

"It appearing to this board that great inconvenience is sustained in consequence of having several sheets designated by the same names, Ordered that the street commissioner be directed to attend to the completion of the new map of the City and that he be authorized to employ Mr. Richard Furman to assist him in the execution of that duty."

February 4, 1803.

"Alderman Barker } were appointed a committee in connection
Alderman Brasher } with the Comptroller and street commis-
and Ald. Oothout } sioner to examine the new map of this City
now nearly ready to be published and to
take such measures as will be most proper to indemnify this
Board and the persons who have executed the same for the ex-
pense that has been incurred."

October 24, 1803.

"A petition from Joseph F. Mangin one of the City surveyors was received and referred to the Comptroller."

November 14, 1803.

"The Comptroller to whom was referred the petition of Joseph F. Mangin reported that a balance of one hundred dollars is due to him for making the large map of the City. Ordered that the said report be confirmed and that the Mayor issue a warrant in favor of Mr. Mangin for the same."

November 28, 1803.

"The Comptroller having represented to the board that the City Treasurer is in possession of certain notes formerly given to this board by Joseph F. Mangin and which have since been satisfied. Ordered that the City Treasurer be directed to deliver the said notes to the said Joseph F. Mangin to be cancelled."

November 28, 1803.

"The committee to whom was referred certain reports of the street commissioner on the subject of a plan for the future streets in the vicinity of the City, Reported that the map of the City lately printed and ready for sale contains many inaccuracies and designates streets which have not been agreed to by the Corporation and which it would be improper to adopt, and which might tend to lead the proprietors of Land adjacent to such streets so laid down into error. It was therefore resolved that the Street Commissioner be authorized to return the money paid by each subscriber for the said map who shall apply for the same in conformity to the above report, and to repay to any person who may have already purchased the said map, whether he subscribed for the same or not, his purchase money and receive back the map so purchased, and that the street commissioner be requested to endeavour to recall as many of the said maps as have been sold, and either to return the person the purchase money and keep the map or return him two dollars thereof, and deliver him back the map with such explanation upon it as is before contemplated, and that the street commissioner report to this board at the next meeting thereof what shall be proper to be printed and pasted on the face of such copies of the said map as may hereafter be sold or distributed."

January 3, 1804.

"Resolved that application be made to Joseph F. Mangin for the field book which by his Contract he was to furnish to the Common Council with the map of the City made by him and that he be required to insert as far as is practicable on the large map made for and furnished to the Common Council the descriptions and specifications which he contracted to do by his agreement with the Mayor, Aldermen and Commonalty of the 11th of December, 1797.

"Resolved that the street commissioner be furnished with a copy of and be requested to carry into effect the foregoing resolution without delay and to report to the Common Council the result."

October 29, 1804.

"The petition of Joseph F. Mangin in relation to an account presented by him for surveying was received and referred to the Comptroller."

January 14, 1805.

"The Street Com^r. and Comptroller reported on the application of Joseph F. Mangin requesting payment for certain maps which he states to have been formerly made by him for the

use of the Board. Ordered that the Comptroller be authorized to pay Mr. Mangin the sum of Thirty-three dollars upon his giving a receipt in full of all demands."

Same Date, January 14, 1805.

"Resolved that the St. Com^r. be instructed to report an estimate of the expense of making a map of the Island New York exhibiting a distinct view of the real property therein belonging to this Corporation and of the roads thereof."

December 30, 1805.

"Aldermen Farlie, Van Zandt and De La Montagnie were appointed a committee to examine the accounts of Mr. Mangin, one of the City Surveyors."

June 30, 1806.

"The following report was received. The Com^t. appointed to take into consideration the subject of having a survey and map made of the Island of New York:

"Report, that they have duly considered the subject and are of opinion that the obtaining a *correct* Map of this Island is a matter of very great importance to the public and that Mr. Hassler and the person associated with him are commended as possessing the Talents requisite for making such survey and map. The committee therefore recommend that they be employed, at first for three months."

An Act of the Legislature of the State of New York, passed April 3, 1807, appointed Gouverneur Morris, Simeon De Witt and John Rutherford Commissioners of Streets and Roads in the City of New York.

March 22, 1811, this Commission reported with a map that determined for the future the scheme of the streets, etc., of the city. A copy of this map may be found in Valentine's "Manual of the Common Council of New York," 1853, p. 262, to which reference is made. It was approved and adopted by the Common Council April 22, 1811. The appointment of the Commission superseded the action of June 30, and the map problem was solved.

It will be observed that Mr. Mangin, claiming to be an engineer, on February 22, 1796, submitted a project to the Common Council as absurd then as it appears now. The "fresh Water Pond" was subsequently filled in. The old Tombs stood about in the middle of its area.

Mr. Mangin was sworn a freeman of the city May 9 of the same year, 1796, and, *a week later* was appointed a *Surveyor of the City*. After a spell of a couple of months, he had another project for a survey of the city, which was favorably considered, but it was found necessary to couple him with Mr. Goerck, who had been a City Surveyor for several years, and was a very able man.

The Recorder drew a contract December 11, 1797, in

which the name of Mr. Goerck came first. It appears that within a year Mr. Goerck, unfortunately, died, leaving the work in the hands of Mr. Mangin.

It was not until late in 1803 that the engraved map was given to the public. Valentine's Manual for 1856, p. 338, has a copy, entitled, "Plan of the City of New York, Drawn from Actual Survey by Casimir Th. Goerck and Joseph Fr. Mangin, City Surveyor, New York, Nov., 1803." For the "large map," see copy with the New York Historical Society, which has the *paster* upon it that was arranged for by the Common Council November 28, 1803. Both maps are beautifully executed. Mr. Mangin was undoubtedly an expert draughtsman—for this reason Mr. McComb employed him—but there does not appear to be any evidence that he was either civil engineer, architect or accomplished surveyor; neither has the writer been able to find that he was practicing in New York as an architect. Certainly there were no important public or private works appearing to his credit. Indeed, if at that time he had been regarded as even the "putative" designer of the City Hall, such recognition ought to have brought him employment. He was not a partner of Mr. McComb, simply an employee. The name of the latter alone appears upon the prize designs.

Mr. Mangin was well and liberally treated by the Common Council; at the same time it becomes apparent why he so strenuously opposed an examination of his map by Mr. Loss.

The facts are that, owing to the claims made for him by injudicious French friends regarding the City Hall designs, his remarkable engineering project for a "safe harbor for shipping" in the heart of the city, and the trouble that arose over his map, he became discredited with the city fathers, for we find no further mention of him in the minutes of the Common Council until May 30, 1808, when the following entry was made: "An application of Joseph Mangin, *late* City Surveyor, to be appointed one of the surveyors for the island, was referred to the same committee"—Committee on Applications for office. There was no report by the committee, and Mr. Mangin's name does not appear in the City Directory as a city surveyor for the years 1805 to 1809, both inclusive, but from 1810 to 1818 it again appears so designated.

(To be continued.)

The Principles of the Business Management of Office Practice of Architects.*—Concluded.

Such is a fairly complete list of common forms, samples of many of which I have here for your inspection. Unity in size for a set of forms would offer no disadvantage in serviceability for use and would afford the maximum of uniformity for filing. Such, however, has not yet been deemed practicable, and so we attain as nearly as may be to perfect utility for sets of forms by adopting sizes for the various sheets which are multiples of a fixed unit. That unit in many offices is the size of a letter-head of $8\frac{1}{2} \times 11$ to 8×10 . When having to devise forms, start out with the idea that the dominant charac-

teristics of a model form should be: Convenience in size, individuality in color, usefulness in subject matter. Consider, too, that it is sometimes expedient to restrict size, or to separate matter by using both sides of the form rather than only the face. Bear in mind that color, as well as size, should be used to emphasize individuality for facilitating ready identification.

Now a few words about the drawings: Drawings are more convenient if kept flat rather than rolled either for current work or for finished work. For facilitating drafting room work, a copy of each drawing of current work should hang on a rack in the drafting room, and is most serviceably a cloth-mounted white print, having

*An address to the Upper Classmen of the School of Architecture, Department of Fine Arts, of Columbia University, April 28, 1908, by H. S. Kissam, a graduate of the Department.

two opposite edges bound between oak slats by McGill fasteners. A uniform size of sheet using a multiple for details should be adopted for all the drawings of each building.

It has been found that relatively few full-sized details require a sheet larger than 27x40. Drawings of finished work are most compactly kept by enclosing those of each building in very large envelopes, labelled by tags with the building number and laid flat on shelves in the order of numbering. A card catalogue drawer of drawings of current work indexed by the character of the building, which may be further emphasized by the color of the cards as white for public buildings, red for ecclesiastical buildings, yellow for domestic buildings, giving the number of the buildings with one card back of a guide card for each ten drawings, five on a side of a building, on which is entered the building number, the drawing number, title, date of making, date of revising, name of author serves for a record of drawings. Each guide card has on it "location," "owner," "description," "total cost," "cube contents," "cost per cubic foot," "date of first contract," "date of final payment." In the front of the drawer should be key cards to draftsmen's initials, and key cards of the number of each piece of current work.

A common scheme for classifying drawings using a numbering system is to designate preliminary drawings, sketches and studies by letters of the alphabet as A. 1, meaning drawing No. 1 of first set of sketches. B. 1 meaning drawing No. 1 of second set of sketches, etc. Then to set apart Nos. 1 to 99 for numbering general drawings, plans, elevations and sections; 100 to 199 for numbering constructional steel and ornamental drawings; 200 to 299 for numbering plumbing, sewerage, electrical and heating drawings; 300 to 399 for numbering scale details, interiors, etc.; 400 to 499 for numbering (on buff-colored cards) full sized details; 500 to 599 for numbering (on blue colored cards) shop drawings. This can be elaborated by using sub-division markings to indicate the trades work shown (as A to D for granite, E to I for terra-cotta, etc.) and also by doubling the alphabet letters for indicating the kind of drawing (as AA for extra prints—for framing prints—CC for cloth tracings—DD superseded, etc.), and when so used is a most convenient system for ready identification. Each drawing should be labelled with a date, its building number, its class number, name of the building, name of the drawing, scale, the initials of its maker, the initials of the one who traced it, the initials of the one who checked it and the initials of the one authorizing its issue. It is of course also lettered with other titles and names, etc., as one chooses.

In figuring dimensions on drawings, the chances of error are diminished by running all interior lines through to full totals and by running complete lines in pairs particularly on each of the four sides of the plans, fixing every dimension of each feature by more than one measurement. Each room should be designated on the plans by a name, or a number, and each door and window opening should have a number on the plans. For this latter, it is usual to set apart numbers 1 to 99 for the openings of the lowest story; numbers 100 to 199 for the openings of the next story above the lowest, and so on.

The subject of contracts, I believe your courses include instruction in, so I will not go into it other than to say—it is found best to have contracts executed in triplicate so as to provide a copy for each interested party.

Attach to the office copy a schedule of unit prices, a copy of the proposal, a copy of the bond, and a memorandum showing how the contract sum was determined. Have the contractor sign a set of blue prints of the drawings and sign the specifications. Notations of changes with date, arising after signing a contract, should be made in ink on a set of drawings kept with the contract set and should not be made on the contract set.

A contract does not commonly, but should always state dates for the completion of various stages of the work in order to establish a firm basis in the case of default on which to rest an order of cancellation. There is at present a judgment forming that a building contract should be reduced in matter to a bare agreement—to build—by a certain time—completing portions of the work at certain dates—for a certain price—to be paid at certain intervals—and to relegate all other modifying provisions to place in the general conditions of the specification. I have not as yet had time to study the legal aspect of such a step; it has its advantages in conducting to system and to simplicity.

The filing of photographs, magazine plates, clippings, etc., is most successfully done in units of vertical cabinet files of four drawers high, each drawer 10x14 in size. The material is separated into groups of multiples of ten by the folders they lie in, or by heavy cardboard index cards of the groups. Photographs need no folders, but are numbered on the margin. A card catalogue drawer for indexing the contents of filing cases enables one to introduce cross reference and minute classification of the photographs, plates, etc., for the application of which I refer you to the two following interesting publications: Bulletin No. 9, University of Illinois, Urbana, Ill., called "An Extension of the Dewey Decimal System of Classification Applied to the Engineering Industries;" Bulletin No. 13, University of Illinois, Urbana, Ill., "An Extension of the Dewey Decimal System of Classification Applied to Architecture and Building." The filing of catalogues for convenient reference can be accomplished in exactly the same way as described above for filing photographs.

My talk has now substantially informed you of the elements and of their importance on the business side of practice; such is as much as can be done at this time. I have here a few models which you may look over, some of which have been collected by the committee on employment and on office practice of the Society of Columbia University Architects, who give special attention to this matter, and through whose courtesy I am able to show such forms to you.

On closing, I wish to recommend that you adopt a comprehensive scheme of forms and systems at the beginning of practice. It need not be elaborate for your early usefulness, but it can be expanded as your practice grows. By so doing you will escape the plagues of adapting early devices to later complicated conditions. I would emphasize again that you bear in mind in devising forms that uniformity in size, variation in color, and simplicity of application are the distinguishing marks of a model set which you will then find will operate themselves. Finally make it a habit to write down everything and keep what you write in appropriate files; to confirm every verbal understanding; to date all drawings, documents and memoranda; to give every piece of work a number and make it the filing number for all letters, drawings, specifications and records of such work.

Society of Beaux-Arts Architects

Jury's Criticism of Final Competition Paris Prize

The jury for the award in the final competition of the Paris Prize met on Wednesday afternoon, July 29, and selected the design numbered 3, which proved to be that of William Van Allen, a pupil of Mr. Donn Barber.

The jury consisted of Messrs. Edward L. Tilton, chairman of the Paris Prize Committee; S. B. P. Trowbridge, J. H. Freedlander, Robert D. Kohn, Harvey Wiley Corbett, J. P. Benson, Edward P. Casey, W. A. Boring, W. W. Bosworth, Walter B. Chambers and John V. Van Pelt.

The competitors were John A. Lange (Donn Barber), who was given No. 1; Carl C. Adams (Hornbostle), No. 2; William Van Allen (Donn Barber), No. 3; J. Edwin Hopkins (Jallade-Prévot), No. 4; Raymond Ewald (Donn Barber), No. 5.

On first assemblage the jury was favorably impressed by No. 2, which showed qualities of draughtsmanship and a pleasing reserve in the intelligent contrast between the decorated and plain wall surfaces. The plan presented the long side of the lot, instead of the end, for the principal façade, which brought about an original arrangement in plan.

The jury were next attracted by No. 4, which had a brilliant plan. No. 1 and No. 5 were criticised because of their unimaginative copy of the Paris Opera House. These two designs were finally eliminated.

A discussion then ensued upon the merits of No. 3, and comparisons were made between No. 3, No. 4 and No. 2, which finally resulted in the award of the prize to No. 3 on the first ballot. Two ballots were necessary to determine the second place, which was finally awarded to No. 2, although No. 5, despite its early elimination for first place, found supporters on account of its faithful interpretation of the program.

The principal encomiums and adverse criticisms of the different designs were as follows:

No. 3, the prize, was considered brilliant with good entrances and exits, novel in form and arrangement; but objection was raised to the narrow first plane of the plan, which resulted in a restricted main elevation as it would appear in perspective. The general form of the rear of the plan was considered somewhat complicated and the elevation was severely criticised on account of the excessive height of the building.

No. 2, which was awarded second place, was liked on account of the effort shown to find a new solution of the problem, but the plan was severely criticised because the administration was divided into two distinct groups that could hardly balance each other, and because the depth from the front building line to the auditorium was so reduced that any display of a monumental staircase asked for in the program, and any vista of approach, were excluded or greatly restricted. The jury considered that the selection of an arrangement which made the narrow dimension of the lot coincide with the depth of the building was evidence of bad judgment on the part of the author. The same lack of judgment was shown in a minor way by the introduction of attractive ornament on the top of a dome so flat that it could never be seen.

The plan of No. 4 was much liked and showed even more brilliancy than that of No. 3. Nevertheless, the jury considered that the main entrance, exits and arrangements of stairs were not susceptible of as effective treatment as those of No. 3, and that they were less practical and would not facilitate the egress of crowds as well.

The chief objection to No. 4 was on the score of the elevation. The jury did not like the large arch of the principal motive, which broke up through the main line of the cornice. The accompanying motives, also single arches, did not contrast with the central motive and hardly seemed to fill the spaces allotted them. The scale of the building was overdone, and the jury thought the detail somewhat commonplace.

The general standard of the competition was not considered high, but the jury believed that the author of No. 3 would be able to maintain a high grade of excellence in his work in Paris and were glad to award the prize.

JOHN V. VAN PELT.

HOUSE OF A. B. HARLOW, ESQ., SEWICKLEY, PA.

Messrs. Alder & Harlow, Architects.

This house was planned to satisfy an impelling desire for light and sunshine which in the hazy atmosphere of Pittsburgh's suburbs are most desirable elements.

With this in mind the ceilings are set low to avoid dark spaces in the rooms above the windows, as well as to give other comforts. The windows are wide and of generous proportion to allow sunshine to penetrate well into the rooms. No trees are allowed within fifty feet of the house, but low-growing shrubs, hedges, flowering plants and climbing vines are being trained and nurtured for an eventual mellow setting.

The house faces South, giving the desired orientation for the living rooms and hall across the front, and affording a fine view of distant hills across the Ohio River.

The walls are faced with paving brick of a soft brown red color which, having a vitrified surface, are washed clean by rains. The brick are laid in gray cement mortar with "tucked" joints. The roof is of red Akron shingle tile. The chimney tops are of white enamelled terra cotta which remains clean and also protects the brick work from disintegration, which stone caps will not do, as more or less moisture penetrates them.

Within the house is simply finished to express comfort and home life without exploitation of woodwork. The finish of the library and hall is straight oak, stained a nut brown, with the soft, natural surface of the wood preserved. The tone of the wood is carried on the walls by a brown fiber paper.

The living-room is white paint. The dining-room mahogany and all bedrooms have painted finish.

All floors are of hardwood. The floors of the first story rooms are of oak and all floors are stained very dark and finished with wax.

HOUSE OF THE HON. J. B. HENDERSON, WASHINGTON, D. C.

Mr. George Oakley Totten, Jr., Architect

This house is situated at Sixteenth Street and Florida Avenue, and has been leased for a number of years to the French Government for use by the French Embassy.

It has a frontage of sixty-five feet and a depth of eighty feet. The exterior is of carved Indiana limestone with slate roof and copper cresting.

The main entrance is on Sixteenth Street, through ornamented wrought-iron doors, with an entrance hall furnished with white Caen stone walls and a marble mosaic floor.

A feature of the interior is the well-designed grand stairway of marble, with a balustrade of wrought-iron.

On the second floor is a large drawing-room twenty-two by forty feet, and a smaller drawing-room, circular in form, with many windows.

The two upper floors are devoted to bed-chambers.

The general style of interior decoration is in the modern French style, and in keeping with the good architectural character of the exterior.

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THAT investors are preparing to take advantage of the unusually favorable conditions for the erection of buildings now prevailing throughout the East, and particularly in New York, is beyond question. Hardly a day passes without plans being filed for some notable building, notwithstanding the fact that the estimated cost of structures for which plans have already been prepared greatly exceeds the record for the corresponding period of last year. The unmistakable indications of an early business revival apparent on all sides are probably largely responsible for the increased activity, as owners are anxious to award contracts for contemplated improvements before the inevitable rise in prices occurs.

IT is not improbable that the new order of building which calls for the erection of structures to heights unheard of a few years since, and is rapidly transforming the larger cities of the country, will also necessitate the enactment of laws unheard of, or at least not required, under former conditions. It is very apparent that if the right to have and enjoy property in New York without its being interfered with or depreciated in value by a structure reared on the adjoining or adjacent property exists, many and material changes and additions to present laws should be made to preserve that right. Matters of light and air as affected by the erection of mammoth buildings have received considerable attention although little relief has as yet been afforded. Another matter, which has not perhaps attracted as much notice or provoked as much eloquence, but which is nev-

ertheless of real importance, is that of draft in both smoke and ventilating flues belonging to low buildings.

NOT infrequently has an unfortunate owner of what has come to be known as "an old building," to distinguish it from the modern skyscraper, been unable to rent parts of his building or in some instances to retain his tenants owing to the effect of his neighbor's high building on the flues of his own. These effects are varied and fantastic. Sometimes the odors from a kitchen, located perhaps in the basement and ventilated through an exhaust flue extending to the roof of the building, are carried by the wind deflected from the side of the lofty neighbor, down into a court and through the open office windows, rendering the offices untenable. The height of the neighbor, and its location, at times some distance away, render it impracticable to carry the flue to the top of the higher building even if the expense could be disregarded. Another variation causes a back or down draft in furnace and fireplace flues. A recent instance of this description is the Appellate Division Court building, at Twenty-fifth Street and Madison Avenue, New York, supposed to be affected by the Metropolitan Life Building tower, at Twenty-fourth Street and Madison Avenue. A new foundation and an increase of some forty feet in the height of the chimney is planned in the hope that the difficulty will be obviated. While in this case the cost, amounting to two thousand dollars or more, will fall upon the city, there are instances innumerable where the erection of high buildings has worked great and irreparable loss to private property owners in the neighborhood, by the deflection and obstruction of air currents alone. It would seem that the consideration of the various matters of importance in connection with the erection of lofty structures and their effect on the welfare of the city and the individual might properly include some measure of attention and study devoted to this feature of the subject.

IN another column of this journal is begun an article the purpose of which, as stated by the author, is to traverse certain claims that have been advanced in support of a theory which gives one "Mangin" credit for being the designer of the New York City Hall, instead of John McComb, Jr., the putative architect. While there may be some question as to whether absolutely irrefutable proof has been furnished that McComb and he alone was responsible for every line and detail of the structure, certain it is that up to this time very little that can be called convincing or competent evidence has been presented tending to prove that anyone else was thus responsible or that McComb was not. But even disregarding much, which if not entirely conclusive, undeniably points to McComb's right to enjoy the title of architect of the City Hall, we would ordinarily give some credence to a tradition or popular belief, which in this instance amounts almost to history, and would hesitate long before taking any action that would rob a man's memory of an honor that had been attached to it undisputed for a century. If it can be shown beyond peradventure that Mangin and not McComb was the actual architect then of course a monstrous wrong has been done him, and one that no tardy acknowledgments or honor to his memory can ever repair; but until the proof is forthcoming, we deplore the readiness with which the press and public accept as an established fact what must for the present be considered more in the light of a bare possibility.

THE AMERICAN ARCHITECT

AND

BUILDING NEWS

Vol. XCIV.

WEDNESDAY, AUGUST 19, 1908

No. 1704



FOIL FOR CITY HALL, AS PROPOSED BY THE ARCHITECT.

John McComb, Jr., Architect (Concluded)

By EDWARD S. WILDE

Let us now exhaust the record—Minutes of the Common Council—as to the building of the Hall.

March 24, 1800.

"Ordered that Aldm. Lenox, De La Montaignie & Coles be a committee to consider the expediency of erecting a New City Hall & to report to the Board their opinion thereon as also the proper Place a Plan of the Building an estimate of the expense and in what manner the present City Hall ought to be disposed of."

October 4, 1802.

"The Board having proceeded to ballot for the plan of a Court House and that of Joseph T. Mangin and John McComb, Junr. having a large majority of votes was accordingly adopted."

October 11, 1802.

"Ordered that a New City hall be erected conformable to the plan of *Messieurs* Mangin and McComb lately adopted by this board, that the Recorder, Alderman Lenox, Alderman Barker, Mr. Gilbert and Mr. Brasher be appointed a committee to carry this resolution into effect and that the sum of \$25,000 be appropriated towards erecting the same."

October 13, 1802.

"Mr. Crolius and Mr. Le Roy were added to the Committee for building a New City hall in the stead of Alderman Lenox and Mr. Gilbert who are no longer members of this board."

December 27, 1802.

"Resolutions on Wh. building Committee are to report."

Then follow several long resolutions of enquiry really in opposition to the undertaking; they were ingenuously worded and called for much detailed information.

February 21, 1803.

"The chairman of the Building Committee presented to the Board an estimate of the prices of marble and stone of various

qualities for the *front* of the New City hall. Ordered that the consideration thereof be postponed until Thursday next.

February 24, 1803.

"Mr. Riggs resolutions respecting the New City hall. Ald. Brasher moved the previous question which was carried.

"Ordered that the consideration of the estimate of the prices of different materials to be used for the *FRONT* of the New City hall, and presented by the Building Committee, be postponed until Monday next." Same as to materials.

March 7, 1803.

"Report of Committee rejected."

This Report recommended that the building

"be carried into effect on something of a smaller scale, that the *FRONT* of the said building ought to be built of the Stockbridge marble and that the *SIDE* or *END* VIEWS be built of Morrisania or Verplancks marble, at the discretion of the Board or committee, and the *BACK* VIEW or side be built of Brown stone."

March 14, 1803.

"Committee discharged, new commit. appointed."

The mechanics were also ordered to be discharged. The new committee of one from each ward consisted of Aldermen Van Zandt, Oothout, Brasher, Barker and Minthorne, together with Assistant Aldermen Le Roy and Bogardus, seven in all.

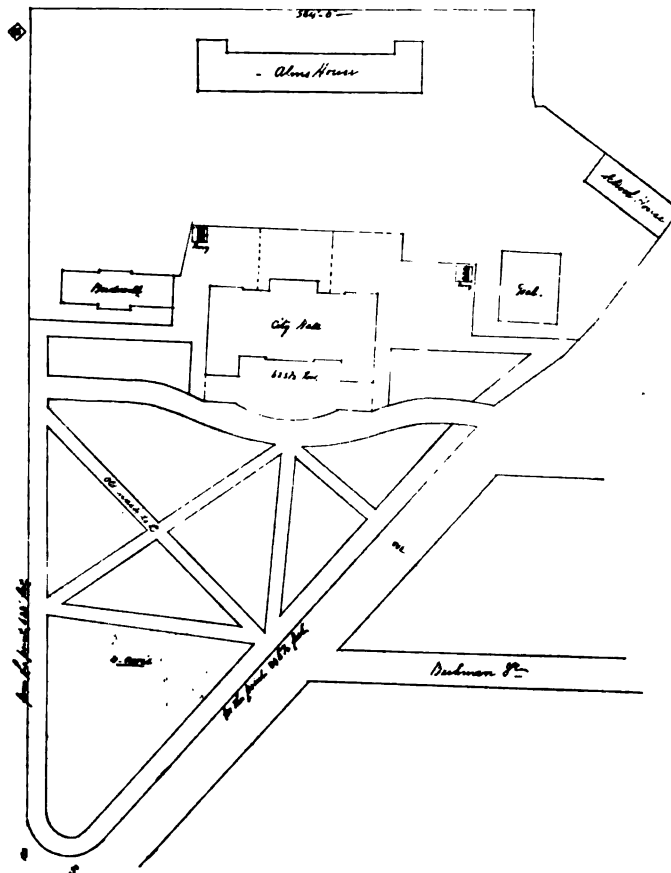
March 21, 1803.

"Report of committee on Plan, site &c confd."

The committee reported:

"That they have paid much attention to the subject committed to their charge and as the result of their deliberations they beg leave to recommend that the reduced plan presented to the board by Mr. John McComb Junr. be adopted, that the vacant space of ground between the gaol and bridewell be determined

on as a proper site for the same—That the wings in front range with Murray street on a parallel line with the fence in front of the Almshouse & the cupola range in line with the cupola of the Almshouse. That the FRONT REAR and SIDES be built with



GROUND PLAN, AS DRAWN BY MCCOMB

brown free stone, and the residue of the materials as shall be directed hereafter." At the same meeting \$25,000 was appropriated and the committee was ordered to proceed.

April 4, 1803, a report of the building committee was received:

After referring to their report of the 21st of the preceeding month in which they had recommended the adoption of Mr. John McComb's reduced plans, which report had been approved by the Board, the committee recommended that the front of the building should be retained "agreeable to the original plan." This report was concurred in by the Common Council and it was so ordered. At this meeting \$25,000 was appropriated and the Committee was ordered to proceed "forthwith."

The next entry is as follows:

"In Common Council April 18, 1803,
The following inscription and resolutions for laying
the first stone of the New City Hall were adopted, to wit:

The Corner Stone of the
Hall of the City of New York
was laid by order of the Common Council

By
Edward Livingston, Esquire, Mayor.
John B. Provost, Recorder.

Wyant Van Zandt.....	Alderman	1st Ward
Andrew Morris.....	Assistant	
John Oothout.....	Alderman	2d Ward
Caleb S. Riggs.....	Assistant	
Philip Brasher.....	Alderman	3d Ward
Ebenezer Stevens.....	Assistant	
John Bogart.....	Alderman	4th Ward
Jacob Le Roy.....	Assistant	
John P. Ritter.....	Alderman	5th Ward
Robert Bogardus.....	Assistant	
Joshua Barker.....	Alderman	6th Ward
Clarkson Crolius.....	Assistant	
Mangle Minthorne.....	Alderman	7th Ward
Henry Brevoort.....	Assistant	

John Oothout, Esquire	} Building Committee
Wynant Van Zandt "	
Philip Brasher "	
Joshua Barker "	
Mangle Minthorne "	
Jacob Le Roy "	
Robert Bogardus "	

John McComb, Junr.	Architect
Joseph Newton	Carpenter

Anthony Steinback	} Masons
Arthur Smith	

George Knox	} Stone Cutters."
Alexander Campble	

On the day of Anno Do. 1803
And the 27th year of the
Independence of the United States.

Newspaper reports of the ceremony of laying the cornerstone, May 26, 1803, appeared in the *Daily Advertiser* and *The Commercial Advertiser* the following day, as follows:

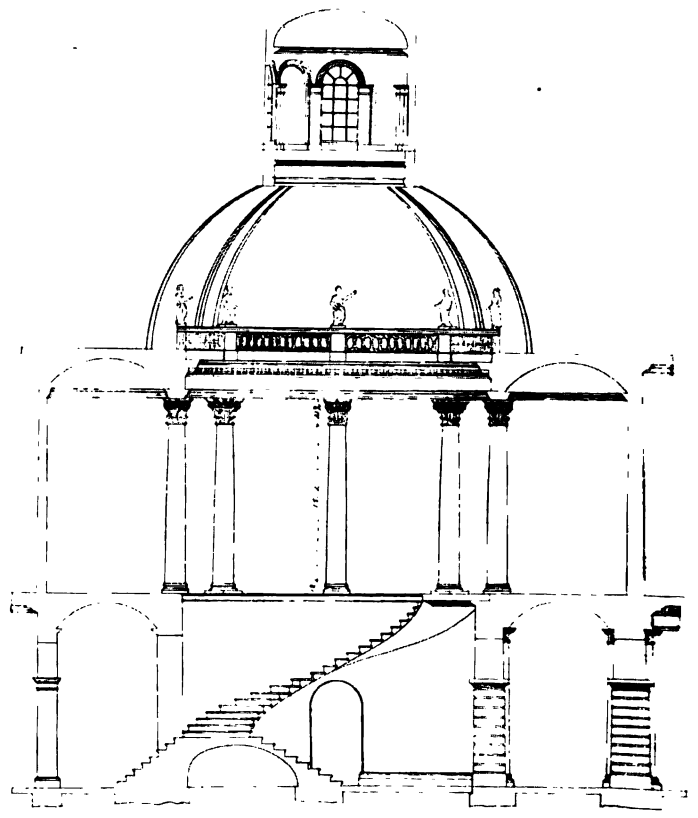
"Yesterday afternoon the Honorable the Mayor and Corporation of this City, attended by the gentlemen of the Bar and escorted by a detachment of Artillery and the uniform companies of Militia, commanded by Majors Curtenins and Loomis, performed the ceremony of laying the foundation stone of the New City Hall in front of the Park.

"Precisely at 6 o'clock, on the signal guns being fired, his Honor the Mayor, assisted by Mr. McComb, the architect, laid the stone at the South East corner of the edifice," etc.

Is it possible that this collection of gentlemen, possessing full knowledge of what had gone before, should have totally disregarded any just claims by Mr. Mangin or his friends?

It is true that Mr. McComb did, at that time, make the following entries in his diary:

"May 27. This day a communication was published in the *Evening Post* respecting the laying of the corner stone."



SECTION, AS DRAWN BY MCCOMB, SHOWING STAIRWAY.

"June 2d. Another communication was published in the Evening Post about the manner Mr. Mangin was treated in not having his name published as the Principal Architect."

These entries were Mr. McComb's compliments to the newspaper and its anonymous correspondent. The newspaper, then about eighteen months old, has continued on its way down to the time of the recent Blackamoor dinner in Fulton Street, when, true to Mendel's law, the color reappeared. (See *New York Evening World*, April 28 last.)

August 11, 1803.

"Resolved that the Mayor be authorized to issue his warrant for \$10,000 in favor of the Building Committee."

September 29, 1803.

"A statement from Mr. McComb concerning the difference of expense between stone and Philadelphia marble for the front and sides of the new City hall was received and referred to the Building Committee with directions to enquire whether the marble can be procured and the probable expence and to report thereon to this Board."

October 24, 1803, a report was received from the Building Committee.

In this report it was stated that, from the architect's estimate, the difference of expense between marble and brownstone on *three sides* of the building would not exceed \$43,750, with a strong recommendation that the change be made.

"It was thereupon resolved that the FRONT and TWO END VIEWS of the new hall be built with MARBLE and that the Building Committee take such measures as they shall judge proper to accomplish the same."

December 5, 1803, a report of the Building Committee "in relation to the general account of the committee was received" and ordered to be published.

December 19, 1803.

"Resolved that Alderman Van Zandt, Alderman Brasher, Alderman De la Montagnie, Alderman Morton, Alderman Minthorne, Mr. Le Roy and Mr. Bogardus be appointed the standing committee for building the new city hall with the same powers as the former committee."

November 24, 1804.

"A communication of Mr. La Carriere respecting defects in the building of the new city hall was referred to the Building Committee."

November 29, 1804.

"The following report was received to wit": "The powers vested by the Board in the Building Committee being about to expire they deem it their duty previous to this event to lay before the Board a statement of their proceedings during the present year in relation to the New City Hall."

The report is of considerable length, and ends thus:

"Before closing this report the Committee beg leave to state that they have perused a communication in relation to the new hall made to the Board by a Mr. La Carriere and which has lately made its appearance in the *public papers*, the committee hope that this person has been actuated by upright motives and not been led astray by any sinister views in discovering so much apparent zeal for the public interest, but unfortunately for Mr. La Carriere, the committee has been able to obtain correct information on all the important objections he has thought proper to advance and they fully assure the Board they are founded in Error and are totally groundless. By order of the committee.

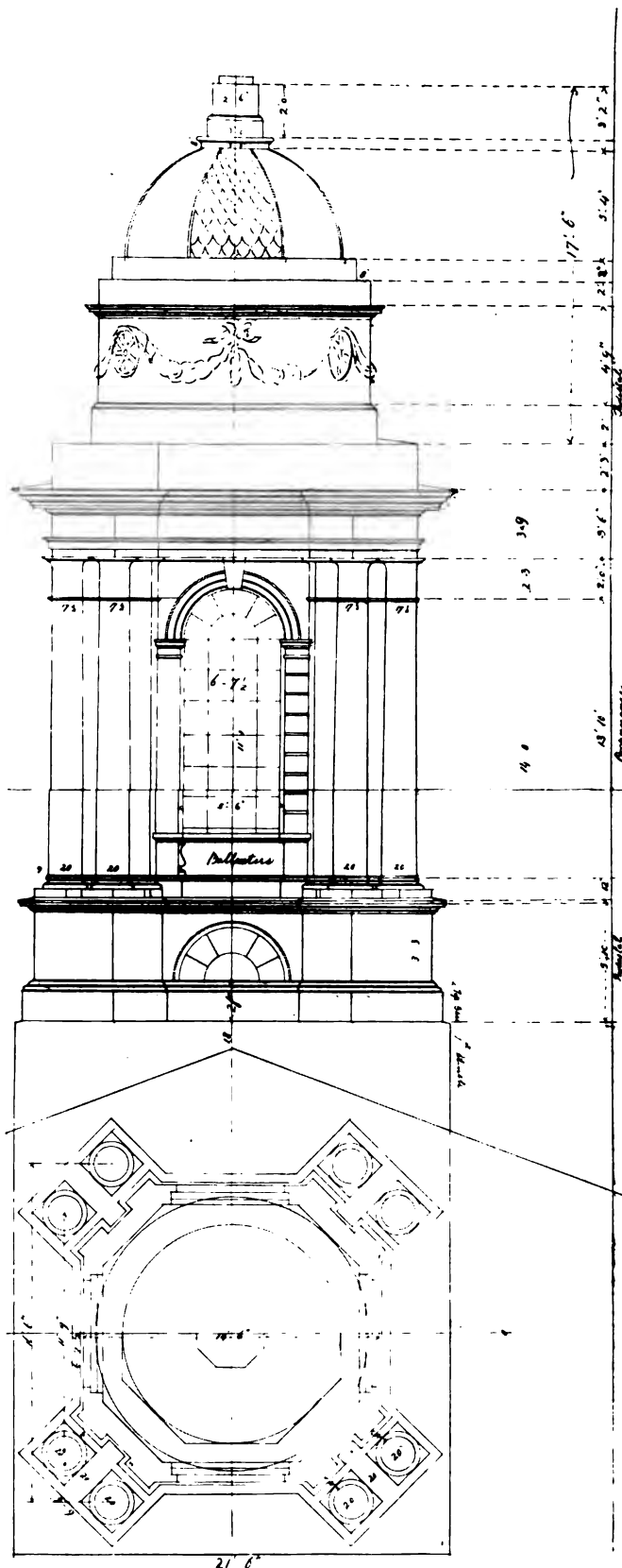
"Wynant Van Zandt, Junior,
Chairman.

This report was ordered to be published.

Assuming that the "*public papers*," referred to above, comprised the *New York Evening Post*, reference was made to its columns, where, sure enough, under date of October 2, 1804, the following appeared, prefaced thus:

"The following is published at the earnest solicitation of the author who has subscribed his name in full confidence that his ideas are correct, and can be supported if he is called upon.

For ourselves we mean not to be understood as giving any sort of opinion in favor of nor against the objections here stated; we know but little about this subject; but as the piece is one involving public interest, our duty would not permit us to refuse its insertion."



WORKING DRAWING OF CUPOLA, AS DRAWN BY MCCOMB.

"EXTRACT OF SUNDRY OBSERVATIONS RESPECTING THE BUILDING OF THE NEW CITY HALL MADE BY A FRENCH ARCHITECT THE 22D OF SEPTEMBER, 1804.

"To the Citizens of New York:

"In the erection of large Public Buildings," etc.—Here follows

a little more than a column of objections and specific criticisms which it is hardly worth while to transcribe here.

The letter concludes as follows:

"I pass over other faults in that large building, and with regret do I see much public money irretrievably lost, should the present works be suffered to proceed at the rate and in the manner they are begun, I beg leave to conclude by saying, that the Corporation ought to have the works inspected by impartial and *thorough-bred artists*, to stop the present evil, if the same be found to exist, and then give proper directions for the future,



CUPOLA, CITY HALL, NEW YORK, AS EXECUTED.

and thereby save immense sums of money, as well as the disgrace to the city, which cannot fail to attend a continuance of so many defects.

LA CARRIERE,

"Engineer and Architect."

Returning to the Minutes of the Common Council, we find:

"January 21, 1805, Recommendation of Architect, *refd.*"

This was the letter of "P. Labigarre," addressed to

"The Honbl. Maturin Livingston, Esqr., City Recorder," under date of December 28, 1804.

The object of the letter was to induce the Common Council to employ a visiting French architect, Mr. Pierre Thomas Jarrier by name, over the head of Mr. McComb. On January 21, as appears above, the Recorder communicated the letter to the Common Council, where it was referred to the Building Committee, which committee handed it to Mr. McComb.

It seems to have afforded McComb considerable amusement to copy the letter into his diary, from whence it appears at large on page 45 of the current year, February 5, issue of this journal, where it was prefaced thus:

"The bickerings and jealousies in and out of Council which marked the erection of this building were many and sorely tried McComb's patience. An attempt was made to rob him of the credit for the design or, failing that, to force him to share his honors. This is clearly shown in the following letter, Dated December 28, 1804, and addressed to the 'Hon. William—misprint for Maturin—Livingston, Esqre., Recorder.'"

It will be observed that Mr. McComb states in his diary:

"The above letter I returned the next day to Alderman Montagnie assuring him that I could not in justice to myself have any conversation with Mr. Jarrier."

Why, if Mr. McComb had allowed any conversation whatever with this gentleman—for there is no proof that Mr. Jarrier knew of the injudicious letter in his behalf—or had accompanied him over the building, affording him opportunity to even point with his cane, the *Evening Post* would probably have been deluged with communications that it was Mr. Jarrier who showed Mr. McComb how to build his walls so well, how to draw the details, and how to construct the apparently self-supporting stairway, how to simplify the beautiful entablatures of the two orders, how to add here and there direct proof of his individuality in the refinement of every part—and all this printed by the *Evening Post* would have furnished ample occasion to some writer of the present day to air "tradition"—"that a New York mechanic of the first decade of the nineteenth century should have been able to produce a work which had so little in common with the traditions of his calling at that place and time, and then he, the "writer and historian," might have charged that, "*later on*, Mangin was City Surveyor for quite a number of years," and that "it is quite conceivable, indeed, that McComb secured him that very office," and that he, the "writer and historian," might bemoan the indifference to anonymous "Justice" in the first decade of the nineteenth century. with the present anxiety of the city, at the behest of this "writer and historian," "to credit the actual genius of the City Hall than the man who tried to buy and pay for its authorship!"

Still desiring to indulge in self-exploitation, such a "writer and historian" might further surmise that "There is, besides, always too great a chance that Mangin, being foreign, and, presumably, young and recently arrived, not to say poor, and, needless to add, diffident, was imposed on."

It is the earnest desire of the subscriber to this paper that his readers shall look up the two articles of the *Record* and *Sun*—the one in the May number, and the other in the evening issue of May 9 last, as stated in the beginning of this writing.

Perhaps the anxiety of the City of New York to repose unlimited confidence in the quoted statements of such a "writer and historian" would be considerably modified

should it appear, as it does appear, that Mr. Mangin had been a citizen and City Surveyor of New York during some seven years prior to the laying of the cornerstone of the Hall. As to his "recent arrival," his "poverty," and especially his "diffidence," the story of his experience with the city fathers and their experience with him, to be gathered from the foregoing authentic extracts from the minute books of the Common Council, may, when read, have some tendency to clear up. Prior to March 12, 1801, Mr. Mangin had made investments in city real estate to a considerable amount, but none subsequent to that date; the last conveyance by him was in 1809.

We shall now return to the Council minutes—*see ante*—beginning with the appointment of the first committee:

"March 24, 1800, Ald^m. Lenox, De La Montagnie and Coles appointed Committee to consider the 'expediency of erecting a new City Hall.'"

During the following two years this committee was changed and enlarged, so that when it came to offer the premium of \$350 it was composed of J. B. Provost, J. B. Coles, Robert Lenox, Selah Strong and Philip Brasher. The date of the publication was February 17, 1802.

On October 4, 1802, *see ante*:

"The Board having proceeded to ballot for the plan of a *Court House* and that of Joseph T. Mangin and John McComb, Jun^r. having a large majority of votes was accordingly adopted. A week later, October 11, 1802, it was 'Ordered that a new City Hall be erected conformable to the plan of *Messieurs* Mangin and McComb lately adopted by this Board, that the Recorder (J. B. Provost), Alderman Lenox, Alderman Barker, Mr. Gilbert and Mr. Brasher be appointed a committee to carry this resolution into effect and that the sum of \$25,000 be appropriated towards erecting the same."

Two days later Mr. Crolius and Mr. Le Roy were substituted for Lenox and Gilbert, and the committee so constituted was the one whose parsimonious and fruitless efforts led to its discharge March 14, 1803, and the appointment of the committee whose names appear on the cornerstone.

It became well known at the time that at the meetings of October 4 and 11, during Mr. McComb's absence, and in the absence of the Mayor, representations were made that McComb and Mangin were partners in the plan, but when this was shown not to be the case, and when it became apparent that the latter had been employed simply as a draughtsman, the Common Council very properly ignored the claim.

As stated, the new Building Committee was appointed March 14, 1803. At their meeting of April 2 following, at the Almshouse, when the question of reducing the length of the building "in front" was discussed, the following resolution was passed:

"Resolved, That a report be made to the Corporation informing them that it would be proper to retain the Length in front of the New City Hall agreeable to the Plan *originally made* by Mr. J. McComb, say 215 feet."

On March 10, the old Building Committee had directed Mr. McComb

"to make out a plan on a reduced scale, by taking away *three* windows from the extreme depth of the building, two of them to come away from the depth of the end projections of the main front; and by shortening the length of the building by taking out *two* windows, and to make an estimate accordingly."

The reduced plan was furnished, and came before the new committee, and the action of April 2 was taken, and approved by the Common Council.

And, so the Hall was built, the brownstone having, later, been changed to marble on the *three* sides.

And now we come to proof by inspection of the one hundred and more drawings, pertaining to the Hall, and now in the possession of the New York Historical Society. There are but three that belong to the original prize designs. These are the front and rear elevations and a cross-section which, presumably, were drawn by Mr. Mangin. All the others, except the wash drawings, which were the work of draughtsmen other than Mangin, who was not re-employed, were drawn and figured by Mr. McComb's own hand. All the designs, including the very first, were his.

Opposite p. 46 of the issue of this journal of February 5 last, already referred to, are reproductions of the front façade—one of the three originals—and also of the west front on Broadway, made AFTER the reduction of three windows in the depth of the building.

There is a marked difference in design between these two, and, although the latter was not implicitly followed in construction, still the upper one—the main front façade—has all the effect of a pretty picture, so desirable in competition designs, while the other, in detail, is much more satisfactory. For instance, in the former the pilasters come fully out to the corners of the building, which in execution would have had, at an angular view, a heavy effect. "French neo-classic style of the day!" Nothing of the sort. The designs were based on the purity of Sir William Chambers, and the beauty is largely dependent upon an enforced economy in treatment. Certainly the style is not Diocletian; neither is it French, new or old; and the effect of the corner treatment of the end design, instancing this alone, exhibits the work of an "architect of science," while the pretty picture doesn't.

As to the cross-section, another of the three originals, shown on the next page, you can call it what you please. It is simply a show drawing, compiled from Mr. McComb's books, and bears so little resemblance to the executed work that, taken apart, it would hardly be recognized. The stairway, as shown, was not novel, but the one executed by McComb was. When he was building it there was loud cry that it would be unsafe. It, and the rest, have stood very well for nigh a century.

When it is admitted that McComb superintended the work alone, as architect, from start to finish, and drew all the details and made all the calculations with his own hand, the case is closed.

Of the two McComb drawings reproduced in the issue mentioned, the one entitled, "Proposed Foil at Base of Cupola," and the other, on the next page, "Original Plan of Cupola, as in Place Prior to 1830," neither were more than trial designs, rejected by the architect, and were not used.

On page 45 of the same issue of this journal appear three sketches for the cupola, made by Mr. McComb. The one under which he has written, "First idea for the cupola of City Hall," was perfected and used in construction. (See "Drawing by W. G. Wall, published December 20, 1826," now in the Library of the New York Historical Society; there, also, the foil proposed by Mr. McComb, which is given here.) Compare the executed cupola with that of the prize design. The interpolated cupola was Mangin's, undoubtedly. It is incongruous, and, as a design, out of place. When this draughtsman followed directions he did well, but when he disregarded competent instruction the result was not gratifying. Then, there was no time to reform the show

drawing, nor was it necessary. Later, Mr. McComb made the correction.

The original plans were designed and draughted by Mr. McComb, just as the reduced plans were. The cross-section—one of the three original drawings—was made to comport with the plans—not a difficult piece of work.



QUEEN'S BUILDING.
RUTGERS COLLEGE, NEW BRUNSWICK, N. J., 1808
John McComb, Jr., Architect.

A comparison between this cross-section and the Hall of to-day will tell the story of both designer and architect.

The names of several Frenchmen, or "putative" Frenchmen, have found place in this narrative—Alderman De La Montagnie, P. De Labigarre, Mr. La Carriere and Mr. Mangin—with more or less credit to themselves. There remains another to be mentioned—John Le Maire.

Under date of August 5, 1803, Mr. McComb made this entry in his diary:

"Gave Mr. Newton the drawing for an Ionic Capital to glue up for the carver." The result was unsatisfactory, and it was not until some time later that an efficient sculptor was found as appears from the following extract from the minutes of the building committee:

"1805, March 8th. The Building Committee met and appointed Mr. John Lemaire carver, at Four Dollars per day, winter and summer, he to give his work and strict attendance."

The Building Committee, on March 22, 1803, as per their minutes of that date, had given Mr. McComb, as architect, "Complete control over every department." He thus assumed all responsibility, and it is gratifying to find in his journal, when some fault had been found with Mr. Le Maire's work, the following deserved compliment to him:

"I have visited the carvers' shop almost daily, and have been always pleased with Mr. Lemair's attention, mode of working and finishing the capitals,—work which is not surpassed by any in the United States, and but seldom seen better executed in Europe, and which for proportion and neatness of workmanship will serve as models for carvers in future."

When the Hall approached completion, the then Building Committee caused an inscription of their names, and the names of the architect, sculptor and master mechanics upon the top of the blocking course over the front attic story of the Hall. Recently, this blocking course has been removed and placed in the face of the wall of the corridor leading to the Mayor's office.

Mr. Le Maire first appeared in New York in 1795, when his place of business, as carver and builder, was

at 42 Barclay Street. In 1800 he moved to No. 40 of the same street, where he remained for many years. He amassed considerable property, and died here in 1852.

Mr. Le Maire was not indebted to either of his countrymen for employment at the Hall. He was an artist and a highly educated man. Mrs. Le Maire was a Frenchwoman, belonging to a family of quality. For both of them Mr. McComb entertained the greatest respect.

Mr. Le Maire's touch is the only thing French about the Hall.

During the time the Hall was under way, Mr. McComb found time for other work. Notably, in 1807-'09, he furnished plans, elevations, etc., for Queen's Building, the principal edifice of the present Rutgers College, New Brunswick, N. J. This quiet but highly distinguished institution of learning was established by a charter from George III., in 1770, under the name of Queen's College. This charter superseded one that had been granted four years earlier. It was not until 1825 that "it was judged expedient to change the name in honor of Colonel Henry Rutgers, of New York, a distinguished Revolutionary patriot."

The following extracts are made from a college publication relating to this building:

"The corner stone of Queen's Building was laid April 27, 1808. In 1908 it remains the center of the imposing group of College buildings that have been erected during the century.

"The architect of Queen's was John McComb of New York City. . . . He planned and built many public buildings along the Atlantic Coast, and in New York City he designed, . . . the far-famed and much admired City Hall. . . . It was while this building was in process of erection that McComb drew the plans for old Queen's. The similarities of the two buildings are almost as marked as their differences. They both excel primarily by the justness of their proportions; but while the City Hall has its lines softened by much graceful ornament Old Queen's is quite devoid of column, frieze, or fret-work. It carries solely by its proportions, by the relation of cupola to roof and roof to walls and walls to windows and windows to doors. Seen from the Somerset Street front, it gives the impression of substance, solidity, mass, repose. It satisfies without startling one. There is no theatrical or spectacular feature about it. It wins by honesty of purpose, truth of purpose, truth of design, simplicity of lines. In that respect it has no equal among the buildings on the Rutgers Campus. The statement

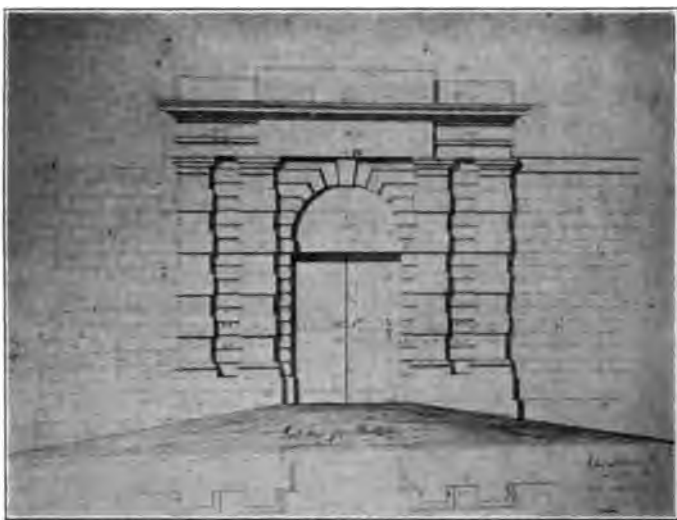


ALEXANDER HALL.
PRINCETON THEOLOGICAL SEMINARY, 1815.
John McComb, Jr., Architect.

may be made even stronger. Among old buildings it has no equal in the State of New Jersey. . . . McComb planned the old College so simply and modestly that it has taken us nearly a hundred years to discover its excellencies. It has always been considered the model in a general way for the new buildings that from time to time are erected on the Campus: and in that respect we are very fortunate. It means that some

day in the future there will be a group of University buildings here that do not fight each other, but, on the contrary, blend together to create a united architectural effect. Old Queen's will have given them the Key Note."

And President Demarest, in a recent communication, writes: "Let me also add that Rutgers College indulges a deep feeling of gratitude to Mr. McComb for his designing of the Queen's Building, which is still the pride of the College."



SALLYPORT OF LOWER BATTERY, FORT CLINTON, AFTERWARDS KNOWN AS CASTLE GARDEN AND NOW THE AQUARIUM, NEW YORK, N. Y., DESIGNED BY MCCOMB IN 1810-11.

It was very pleasant to read this, for Rutgers is of gentle race.

In 1810-11, under the direction, probably, of Captain Richard Whitley, Mr. McComb, as architect, designed and built the fort at the Battery, New York, variously known as the West or Southwest Battery. Mr. McComb designated it "Lower Battery." His account book, for that period, gives the labor cost of construction. He received \$5 per employed day and a commission in addition. The walls of the fort remain as he built them, changed in appearance only, but the entrance, or gateway, is still intact.

"After the War of 1812 the Battery was called Castle Clinton, and remained a national fortress until 1822, when it was receded by the United States to the Corporation, and the Military Headquarters were removed to Governors Island." In 1823, Castle Clinton was turned into a place of amusement, known as Castle Garden. It is now the Aquarium.

In 1815 Mr. McComb furnished a set of plans, elevations, etc., for the Theological Seminary at Princeton. During construction he made six journeys from New York to Princeton, with \$12.16 as average cost for transportation per trip.

About this time he designed and built Washington Hall, at the northeast corner of Broadway and Chambers street.

On July 12, 1813, by a unanimous vote of the Common Council, he was appointed Street Commissioner. During the eight or more consecutive years that he held this position he executed numerous works pertaining to this department of the Corporation.

In the Register's office there are recorded more than one hundred and twenty deeds made by Mr. McComb as executor, trustee, guardian, etc., besides very many in an individual capacity.

The article in the *Record* complains: "In these later years magazine articles have been written for the purpose of celebrating him"—Mr. McComb. The writer begs leave to refer to an article of his own, to be found in the *Century Magazine*, May, 1884. It was not written to "celebrate" this accomplished architect; neither was there call for defamation. It was intended a brief yet truthful story of the building of the Hall.

EDWARD S. WILDE.

New York, June, 1908.

The Need of City Art Commissions

Far too often there is erected in some one of our American cities a public monument purporting to be a work of art, which utterly fails in its mission either to represent a person or an idea, or to fulfill the purpose of furnishing a thing of beauty to be a joy to its beholders. The reason, on general principles, for such abortive efforts to secure art in public monuments with which to embellish our cities, is the crude and unbusinesslike methods employed to provide it; and although these methods have been condemned by all competent authorities for years, and notwithstanding that public opinion is now of much broader grasp than formerly, these same antiquated ideas continue to control, and do infinite damage to our national art. There should be no city in existence in the United States to-day that should not possess as part of its municipal organization an art commission, composed of men who know their business, and whose decision as to all matters of art connected with the city should be final. Mistakes might, perchance, occur, but we doubt very much if there would be at any time cause for the dissatisfaction which has stirred the people of Omaha and elsewhere over the effigy of Abraham Lincoln for which the school children of that city subscribed. *Monumental News.*

Bungalows

Correctly speaking, the word "Bungalow" describes a one-story thatched or tiled house, with wide verandas on at least three sides. The word is of Anglo-Indian origin, and was first used to describe this type of building, so well known in India. The *dak-bungalow* is a house for travelers, such as are constructed by the India Government at intervals of twelve to fifteen miles on the high-roads in many parts of India.

The adaptability of the bungalow form of dwelling to the requirements of families of moderate size has been realized by architects for many years, and the results achieved, particularly on the Pacific Coast, where climatic conditions favor this type of house, have been satisfactory in a high degree.

Where a second story has been added the building loses its chief characteristics and cannot be truthfully designated as a bungalow. It becomes simply a cottage on bungalow lines.

In the American family of moderate size and income the convenience of arrangement found in the city "flat" and the country bungalow are particularly attractive. It reduces the care of the house to a minimum and offers convenience of arrangement not afforded in houses of more than one story.

The three bungalows shown in this issue were designed by Mr. W. A. Hewlett, architect, and present the bungalow in its true form and embody suggestive ideas which we believe are of value.

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Contemplated restrictions and low cost of material stimulate unusual activity.

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Rules to regulate the erection of high buildings of first importance.

ILLUSTRATIONS:

House of H. F. Fay, Esq., Lexington, Mass. (three pages).

Designs for Bungalows (three pages).

A Semi-detached House at Cleveland, O. (two pages).

Additional:

XIV. Century Court and Stairway, Pallazzo Pretorio, Pistoia, Italy.

Courtyard, Pallazzo Vecchio, Florence, Italy.

A NEW departure will be made in the Bureau of Forestry next January which, it is believed, will add materially to its efficiency. It is proposed to transfer the local side of the forestry work to sub-offices located in the principal cities of the West and Northwest, where it can be more readily handled and somewhat emphasized. The Bureau of Forestry and all other government bureaus are working in the interest of the National Conservation Commission, and gratifying progress is being made in the work of taking account of the country's natural resources. While much preliminary work requiring time and study is an undoubted necessity, it is hoped that the adoption of practical, efficient and comprehensive plans for the protection of our forests and other sources of natural wealth will not be long deferred. Present protection is deplorably inadequate, and that forest fires are a constant and frightful menace both to property and life under existing conditions has again been forcibly brought home to us by the recent lamentable conflagration in Canada entailing untold loss and suffering.

WHATEVER the ultimate result of the agitation anent Building Code Revision in New York may be, one of the present results has been to provide numer-

ous and unusually satisfactory commissions to not a few architects, who might otherwise have found their practice during the recent depression far from profitable. It is undeniable that many of the plans for important improvements have been hastened greatly in order to take advantage of present, and what are generally considered, liberal building laws. Whether all the buildings for which plans are being filed will be promptly erected or not, it seems peculiarly fortunate for architects in New York that this matter of Code Revision was taken up at a time when, without some outside stimulus, the majority of projects for the larger improvements would indubitably have lain dormant, rather than during a period of abnormal or even normal activity in construction.

OF course the activity and benefit resulting from building enterprises that go no farther than the plan stage do not extend beyond the profession, but we are constrained to believe that, with few exceptions, the filing of plans will be followed shortly by active building operations. Such action will almost certainly follow if the anticipated restrictions are shortly placed on the building of commercial structures in New York. With the prices of building materials indisputably low, with labor plentiful and efficient, with money coming into the market in increasing volume, and with restrictive changes in the building laws imminent, it would seem there was every reason to believe that we are approaching a period of unusual activity in building operations, which the work in architects' offices during the past few months has amply presaged.

UNQUESTIONABLY the Building Code Revision Commission of this city is confronted with a task of more than ordinary proportions. Overwhelmed with data submitted by organizations and individuals, some of it reliable perhaps, but the major portion impossible of verification without practically duplicating the work of original compilation, it would not be surprising if the commission became a trifle weary and impatient of receiving abstract and disconnected statements of conditions not followed by any logical deductions or suggestions of remedial measures that might be adopted. For months these tables of statistics, covering every imaginable phase and condition of building in New York, have been pouring in and, while they are in many instances interesting if true, their value or application to the solution of the problem in hand is seldom apparent; nor can it be said that invaluable aid has been rendered in one or two of the exceptional cases where deductions have been appended to the tables submitted. When the same recitation of facts leads to the conclusion first that "The erection of a few high buildings tends to compel other owners of real estate to build high in self-defense," and then too that "High buildings by rising greatly above a normal of height, absorb more than their proportionate share of tenants and set up conditions which favor the definite retention of old buildings," it would hardly appear that the correct solution of the matter and the course for the commission to pursue was made unnecessarily plain. With but two or three notable exceptions the suggestions offered in speeches before the commission bear striking evidence that would-be improvers of the present Code have lost sight of the fact that to be of real assistance requires thought as well as words.

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AND

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PALACE OF BRITISH APPLIED ART, FRANCO-BRITISH EXPOSITION.

Notes from Europe

By FRANCIS S. SWALES, Architect, London.

The Architectural Exhibitions.

IT may as a rule be stated that the amount of work in an architect's office is inversely proportional to the display which he makes at an exhibition. There are the exceptions of the few who make regular annual contributions to certain exhibitions and those who belong to a society which requires of its members a certain number of contributions or a display of work at its exhibitions once in such and such a number of years; but it is only when business is exceedingly dull that it could be possible to bring together as fine a display as was made this year at the Royal Academy Show, and at the same time produce the high average of draughtsmanship and design to be observed in the works shown in the British architectural room in the Fine Arts Palace at the Franco-British Exhibition. There are no masterpieces at either show. There is nothing very startling,

nothing particularly remarkable, nothing extraordinarily original, no new departure from or great addition to what has gone before. But the impression upon leaving each is that one has spent a pleasant and not unprofitable visit, a statement that is less often true of the Academy than it ought to be. Much the same may be said of the Salon. There was no *Medaille d'Honneur* and no *Premier Medaille* and these facts are alone significant. It will be sufficient to mention among the best things at the Academy the five large water-color drawings of the buildings for the Royal Insurance Company in Piccadilly, Ashton Memorial at Lancaster and premises in Margaret Street by Mr. John Belcher, A.R.A.; some houses by Messrs. Ernest George and Yeates; a design for the L. C. H. Hall by Mr. Edwin Lutyens; some work in South Africa by Messrs. Baker and Masey, and Sir Ashton Webb's front of the new offices in Pall Mall for the Grand Trunk Railway of Canada—less original in detail, but more

agreeable than most of Sir Ashton's recent work. At the British room of the Fine Arts Palace it will suffice to mention only the design by Mr. Ralph Knott, which won in the competition for the new Hall for the London County Council. There was rather more than the usual number of drawings from England at the Salon, mostly



PALACE OF FRENCH APPLIED ART, FRANCO-BRITISH EXPOSITION.

of the steady-going, hard-fisted sort, not enticing, yet succeeding by some hook or crook, in passing the Jury of Selection. There were also, as usual, a number of good things—both designs and drawings—as instances: Mr. Fernand Janin's study of the celebrated Romanesque porch of St. Gilles, Mr. Farlié's measured drawing of the staircase tower of the Chateau of St. Germain-en-Laye, Mr. Boussois' *project* for an American Newspaper Building in New York, interesting alike in plan and elevation, M.M. Hannatin and Belestas' design for the reconstruction of the theatre at Amiens which, though strong and refined, lacks the charm of the old house it is designed to replace. Also a scheme for a *Salle de Banquet pour l'Hotel de la Presidence* by M. Laprade, and a fine sketch for a house for an artist, near the sea, by M. Boileau. Then, too, there has been the fine International Exhibition at Vienna in connection with the Congress of Architects, at which the eminent strength of American design greatly impressed the European visitors. The residence work has been described by Englishmen as "delightful" and "charming," the monumental compositions as "*fort*" by Frenchmen, while the planning has been commended by visitors of all nationalities.

At 5a Pall Mall East, in the Galleries of the Royal Society of Painters in Water Colors is to be seen another architectural exhibition of more than usual interest. By arrangement with the French Government an exhibition is being held of the drawings executed by M. Jean Hulot while holder of the *Prix de Rome*. Nearly every winner of the *Grand Prix* is a master draughtsman before he commences upon his studies of the works of ancient Greece and Rome. We expect therefore after four years of crowning effort on the part of such men, examples of technique, finish and brilliancy of rendering that would appal lesser lights. We know, too, that a *Grand Prix* is not to be won by any student who has not the power of composition at his finger ends, and in consequence we look to the envois from Rome, especially when the subject, as in the present case, is the restoration of a whole town, to represent something quite as good, if not better than what we believe the original town to have been. M. Hulot does not disappoint us. The drawings of the Restoration of the Greek Colonial town

of Selinus in Sicily are all quite wonderful. It is impossible to imagine finer technique, for it is free from all suggestion of the mechanical and is well nigh microscopic. There is no architectural *aquarellist* of the day more sure of his color and none more subtle in its employment than M. Hulot, but in the present set of forty odd drawings showing the actual state and the restorations of *Silenonte* he surpasses himself. Each is a Museum piece: the sort of drawing one might hold up to all draughtsmen as the goal towards which to work in their efforts to arrive at the perfect representation of architecture. The restoration itself is a monumental composition of great value. These drawings have been reproduced in the recently published Vol. II of *Fragments Antiques*, by D'Espony, and in a larger and finer work entitled "*Monuments Antique*," which is in course of publication under the auspices of the *Institute de France*, while a special monograph on *Silenonte*, consisting of a magnificent set of plates from two to three times the size of those in the well-known work of D'Espony, accompanied by a description written by M. Hulot, is shortly to appear. These two latter publications, which are in the nature of a continuation and enlargement upon D'Espony, are quite the most valuable architectural books produced in recent years and the clear faithful reproduction of the *values* of the original drawings is worthy of the reputation of the Maison Chas. Schmidt by whom both works are being produced.

There remains to be mentioned the French Section of Architecture at the Franco-British Exhibition. There are two kinds of exhibitions: The Exhibition Palaces of the "Franco-British and the drawings displayed in the French Sections of the various Palaces." The latter strike a very high note of excellence. There are few designs shown and these for the most part by one drawing only, but among them are the Armenian Church, shown by a large, beautifully rendered, front elevation, and the Monument Commemoratif, shown by a transverse section only—both by Guilbert—and both in the Rue Jean-Goujeon (which runs between the Grand Palais and the Place de l'Alma) and both epoch-making designs. There are three drawings of M. Despradelles, wonderful design for the monument to American prog-



PALACE OF MUSIC, FRANCO-BRITISH EXPOSITION.

ress. There is a delicate drawing of the central portion of the front elevation of the Grand Palais des Beaux-Arts by M. Deglane, a huge India ink rendering of a perspective view of the Hotel-de-Ville by M. Godeferoy, which won the *Medaille d'Honneur* at the Salon of 1906. M. Chiffiot has sent several drawings—or rather paint-

ings executed in oil—of his restorations of the Maison du Centenaire at Pompeii. M. Cochet contributes two frames of decorative panels in which are displayed an unusual decorative strength, combined with a lively imagination and a fine sense of color. All of the above are shown in the Fine Arts Palace. In the Palace of Decorative Arts one of the most attractive architectural exhibits is the small house for Mr. W. K. Vanderbilt by M. Henri Guillaume.

In considering the exhibition of French design as exemplified by the buildings, the exhibition itself, its scope, *raison d'être* and plan must be taken into account.

The Franco-British Exhibition of 1908 at Shepherd's Bush, London, is, as its name implies, a display of the industries and arts of France and Britain, and includes the Colonies of each: Canada, Australia and India, Algeria, Tunis and Indio-China being represented. It appears to be an outgrowth of the "*entente-cordiale*" not long ago brought about between the two countries, and owes to some extent its existence to the known determination of King Edward VII to preserve and perpetuate a friendly understanding between France and Britain, an understanding which, remembering these are our ancient ally and our national relation, should appeal to the favor of every patriotic American.

What ultimate effect the exhibition will have, if any, as to the cementing of friendship remains to be seen. Perhaps the British public is holding itself to exceptional and temporary good behavior towards its guests, and the natural diplomacy of the French visitor may be all that is in evidence; but apparently the exhibits of both countries are vastly impressive to the representatives of each other, if one may go so far as to judge from the seemingly genuine expressions of surprise and approval which emanate from the parties visiting the exhibition. Talk of "superior British workmanship" dies at the entrance gate to the Machinery Hall, and French visitors find that English design is not all "*banal*." English engineers and mechanics are conceding high excellence to be the standard of current French workmanship in all branches of the iron industries. French artists have expressed their approbation of the English display of arts, especially the painting, but also of some of the sculpture and much of the architecture.

The plan of the exhibition is arranged on an irregular but flat area to the extreme west of London County. Its most imposing entrance is in Uxbridge Road, but on

entering here one is obliged to traverse half-a-mile of galleries filled with heterogeneous exhibits to reach the Wood Lane entrance—which is the principal actual entrance to the exhibition—situated far down a narrow and unimportant street. On two sides the site is hemmed in with small houses, flats, etc. Along the third is the wall of Wormwood Scrubs Prison, while the fourth is open country. The principal axis of the plan runs diagonally across the site, but there is no vista and hence no practical axis. The main entrance forms one side of the Court of Honor. To the left and right are the Palaces of Textiles—French and English respectively. The fourth side is closed by the Congress Hall with a screen and pavilions at either side.

From the front of the Congress Hall bursts forth a cascade—a diminutive imitation of the ones at the recent expositions at St. Louis and Paris. In the center of the Court of Honor is a basin, about one hundred feet by three hundred feet, into which the cascade discharges. The whole court is designed, or rather "adapted" after old models of the Mahomedan period of architecture in India. The proportions of the court are about two squares on plan, the length being parallel to the main axis. A bridge with four kiosk-pavilions crosses the basin near its middle, from which a pleasant view of the court may be had, and eight other two-storied kiosks, four on either side of the basin, project into it and are connected with the footways by small bridges. There is a footway about 12 feet wide near the water level, which is some five or

six feet below the general level of the court and floors of the adjoining buildings. This lower level is available for both promenades and as a landing stage. It is the upper level, however, by which the visitor traverses this court and passes at either side of the Congress Hall into a court of

about three and one-half squares in proportion—whose long axis is perpendicular to the main axis of the exhibition. This court—the Court of Arts—is extremely "Franco-British." It is one court made up of three gardens, one of which is parallel to the main axis, while the two others have one end abutting this garden, while two sides and the other end are bordered with buildings.

Stopping only to note the very beautiful effect of the young trees whose delicate branches, thrown into relief by the white buildings, seem to cast a soft gray shadow over the lower part of the latter and assist the brilliancy of the contrast between the upper portions—towers, domes and walls—and the characteristic leaden skies of



Guillaume
by J. D. H. H. H.

London, and the splendid display of flowers which fill the gardens, one is impressed at once by a contrast in effect between the buildings bordering the gardens to right and left. Those to the right is the work of M. Lucet and M. Martello, young French architects, working under the direction of the architect-in-chief, M. Toudoire (to whom is due the credit of the planning of the whole exhibition, with, of course, the assistance and advice of the



Photographed by F. N. Birkett.

CANADIAN PACIFIC RAILWAY PAVILION, FRANCO-BRITISH EXPOSITION.
Francis S. Swales, Architect.

Commissioner General—that veteran showman, well-known in the United States, Imre Kiralfy). To the left the buildings were designed by Mr. Belcher and two young Englishmen, Mr. Fulton and Mr. Detmar.

It is a matter to be recorded that at one time all of the buildings for the then “proposed” exhibition had been designed, in sketch form, by Mr. Toudoire, and it was these sketches which, some four years ago, first came to the notice of the writer. The design of this Court of Arts was then pretty much the same as it is now; there was a central dome at each of its ends, the buildings nearest the Court of Honor had a single tower each, while those farthest from it had two towers each. From the sketches by M. Toudoire the drawings of the steelwork were made by engineers working in Mr. Kiralfy’s own offices and under his directions. It was after these latter were finished that the present architects were called upon to make the final drawings. The services of Mr. Belcher were secured by making him Honorary Consulting Architect, and he nominated his English confrères. Had Mr. Belcher been given *carte blanche* with the one side and M. Toudoire with the other, there might have been an opportunity for an interesting study and comparison of French and English architectural compositions on the

same scale and for the same purposes and the possibilities of the influence upon future work, resulting from the deductions to have been arrived at, must have been infinite. Of course, these gentlemen were neither given an opportunity to do their best, nor even a comparatively free hand. Indeed, what exhibition ever does or did give the architect one-half the opportunity to work out masterpieces which it might easily do, or have done? At Chicago and at Buffalo things seem to have been better regulated than at most exhibitions, excepting always Paris—but at both of these a little more absolute power should have been placed in the hands of the guiding spirit of the architectural scheme. At St. Louis it required the combined tact, diplomacy and experience, as well as the earnest co-operation of the Board of Architects and M. Masqueray to prevent one man in a strong position from making an absolute mess of the whole of that great enterprise. At the Franco-British Exhibition there has been no Board of Architects and no real Chief-of-Design (as Mr. Masqueray succeeded to an appreciable extent in making himself at St. Louis). So far as the writer has been able to learn, Mr. Belcher and M. Toudoire have never met. In judging of the effects of each of these courts, it must, therefore, be constantly borne in mind that practically all each individual architect has done has been to sell to the Exhibition Company a set of drawings and details, and the company’s executive has done what he has thought fit with them.

Of course all of the designs have to a greater or less extent suffered from lack of proper, efficient control; but the fact that no important features have been cut out (as was done by the Director of Works at St. Louis with the towers of the designs by Messrs. Carrère and Hastings and Van Brunt and Howe) and no vital parts of the designs changed, speaks much in favor of the capacity, intelligence and competency of the executive, for this is a one-man show—conceived, promoted, arranged, directed and controlled by Mr. Imre Kiralfy. He knows everything, has seen everything and done everything. Not a drawing has been used without his personal approval. Not even a little kiosk six feet square could be built without the design first being approved and initialed by



THE PALACE OF WOMEN’S WORK, FRANCO-BRITISH EXPOSITION.

him. We may, therefore, consider the whole scheme of this court as the combined work of M. Toudoire and Mr. Kiralfy, and only the decorative motifs as being the work of the other architects.

Turning then to the compositions of the three buildings by the French Architects, each of the smaller buildings, so far as its mass is concerned, is properly subordinated to the central building, the dome of which dominates the

whole and the smaller domes at each side afford a pleasing transition into the masses of the small buildings. The towers of the latter merely add a point of termination to each end of the group and except for their caprice, attract little attention and detract nothing from the *ensemble*. The central building (Fine Arts) is the work of M. C. Martello, the building to the right (Hall of Music) is also by M. Martello, that to the left (The Palace of Women's Work) by M. Lucet.

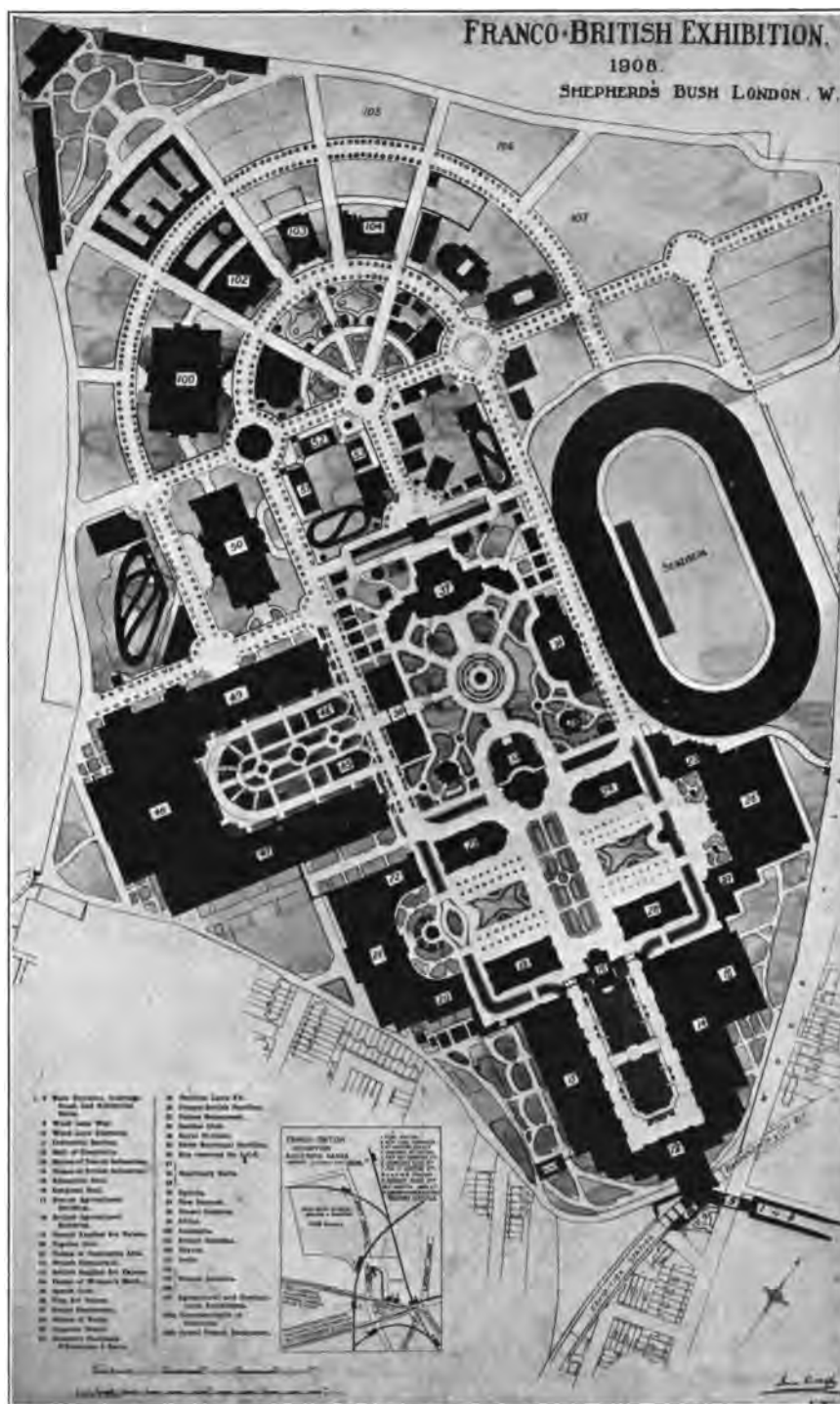
The first thing that strikes one upon examining the opposite side is a lack of relation and scale between the parts of the group. The building to the left (French Applied Arts) by Mr. Lionel G. Detmar, is designed as if intended to be built in a very soft saturated stone, and the effect is heavy and not exactly what one wishes to see at an exhibition. Mr. Belcher's building (The Palace of Decorative Arts), which should dominate the group, is designed with delicate detail and is so small in scale that it is rendered extremely inconspicuous by the elaborate constructions on either side. The front opposite the garden follows on plan a semi-ellipse, and is composed of a simple Ionic arcade of exceptional charm in its proportions, in the center of which is the main entrance, a large semicircular arch, in plaster, made with voussoirs, in imitation of stone.

This arch is flanked by two slender towers and is surmounted by a well-designed quadriga, behind which is a semicircular colonnade of little columns—perhaps eight or ten feet high—which is terminated by the lanterns of the towers around which an order of the same height is carried. Behind the colonnade an octagonal drum supports a very small dome, which is not detailed with that refinement which so generally dis-

tinguishes the work of this architect. Separating the towers from the elliptical arcade is a slight projection with pilasters and a sort of attic-story with a "bull's-eye" window elaborated by a pair of coarse swags. We fancy the latter were not made to details, but the design would be better had the whole feature been omitted. The central feature of the building has been all but obliterated by a colossal band-stand, the roof of which appears to

be larger than Mr. Belcher's dome. Whatever its relation to the other buildings—or theirs to it—this is the only building in the Court of Arts that we should care to see carried out in permanent materials—to feel that it would go down to future times to be regarded as representative of our architecture of today. The last building in this court is the British Palace of Applied Arts, by Mr. Fulton. In scale this is the most consistent of all. Most of the architecture—if we may call it such—is designed as though to be executed in stone, at least all of the supports are so designed, while the pairs of columns are spaced so far apart that it becomes obvious the entablatures must be supported either by steel or wood. The towers seem to be of plaster below and stone above, while part of the decorations of the upper portion have the appearance of scaffolding left in position. Up to the line of the main cornice the effect,

though a trifle heavy, is not unpleasant; but above this cornice this building sings out like the powerful bass in the chorus bent upon drowning out the voices of all around him. It is as gay as a Frenchman's design for a model cemetery on the coast of Corsica. There are memorial tablets and cartouches galore, crouching figures and colossal scrolls, all of which appear to be beaten out of thin metal. In the upper portions of the towers there



are vases, urns, niches, obelisks and angles—a similar collection was to be seen on the corner towers of the Electric Building at St. Louis, where it was intended "to express Electricity," here we suppose it is intended to express British Applied Art.

Beyond the Court of Arts are the Elite Gardens. One crosses a bridge over a canal on the way to this and observes a strong design—again imitating stonework and



Photographed by F. N. Birkett.

PAVILION OF THE CITY OF PARIS, FRANCO-BRITISH EXPOSITION.

Mr. R. Bouvard, Architect.

this time great rusticated voussoirs are imitated. It is unmistakably the work of a French architect and a "Beaux-Arts" man. This is the base—the only part which could be erected—owing to difficulties with foundations—of the tower which it was proposed to erect at this point from the design of M. Joulie. This design promised much in the sketches: it fulfils its early promises so far as it goes, but, unfortunately, it was stopped at the balustrade level of a landing a few steps above the ground, and for the present has the usual appearance of an unfinished work.

As one enters the Elite Gardens at the left of the tower structure there is a very happy little building for a Turkish tobacco company, resplendent with gold and color, surmounted by a dome and possessing two sprightly minarets. It is the work of Messrs. Gregg and Detmar. There is a sunken circular band-stand in the center of the square garden, and the arrangement of the seating around same and the access to the seats is remarkably good. To the right beyond the band-stand are the Garden Club and the Palace (English) Restaurant, by M. Levard and M. Thorimbert, while to the left is the Grand (French) Restaurant, by M. Patouillard, also in this court are the Royal Pavilion by M. E. Corté, and the Press Pavilion by M. Crevel. All of these are designed in French "exhibition style," a style which works out amusingly and cleverly in the hands of a facile draughtsman with a bright imagination and a knowledge of composition and the placing of ornament, and, fortunately, the architects of these buildings possess the necessary qualifications.

One turns through the big square opening in the middle of the Grand Restaurant and passes into a court surrounded on three sides by the Machinery Halls—French on one side, English on the other, and both together in the middle. The Machinery Halls are together one great

building, the largest at the exhibition—the design of Monsieur Edouard Duquesne, and in many respects entirely worthy of his great reputation, its main entrance being one of the none too many noticeable architectural features of the exhibition. In this court, as we enter, there are two very interesting buildings, one, which to the writer is the most agreeable of all the buildings at the exhibition, is the *Pavilion de la Ville de Paris*, a design by Monsieur R. Bouvard, in which he makes use of some of the choicest *motifs* to be found in the whole of Paris. The two *portes-cochères* of the old Hotel de Ville and the fine entrance to the Musée Carnavalet, as well as the window *motif*, with the bas-reliefs by Jean Goujeon, are introduced and all brought into a most pleasing harmonious whole by the adoption of a wide frieze in color, and a cornice in exactly the right position and proportion, with relation to the treatment of the wall and its distance from the ground. The other is the *Pavilion Delieux* housing an interesting collection of the best that is produced by that school whose work is known as *Art Nouveau*. The building, like the bulk of the work contained in it, is all very well if one is equal to an appreciation of it—it is good as compared with most other things of its own kind, but, as compared with its refined and stately neighbor, it is a mere squat, obtuse ugliness. In this court is perhaps the finest garden in the exhibition—a good example of the work of M. Jules Vocherot. Here also are the small pavilions of Messrs. Reddaway and of the Canadian Pacific Railway, the latter being the only building in which animal sculpture is attempted as architectural adornment and one of the few in which color treatment is used externally. In the garden designed by Vocherot there are two very charming little fountains, unsigned, but evidently the work of capable artists; and there are some fine vases which are the exhibits of firms who make the materials from which these are cast or moulded.

Returning to the avenue which passes between the Machinery Halls and the Grand Restaurant one sees ahead the large buildings of some of the British Colonies and of one of her prosperous daily papers. All of these may be commented upon only so far as to tell how much



FINE ART PALACE, FRANCO-BRITISH EXPOSITION.

they cost—the amount probably being as incredible as the proudest colonist could desire, as there was evidently no architect looking after them. In fact, beyond the Elite Gardens, there are only the buildings of Algeria, Indo-China and Tunis, Messrs. Schweppes' reproduction of an old half timber house in Bristol, the pavilions of the Gramophone, Buisson-Hella, Maynards, Ltd., and the

"Daily Telegraph," the latter by Mr. Reginald Blomfield, A.R.A., which afforded any opportunity for architects, except for a few of the more elaborate *kiosks* which are too unimportant to call for mention.

In general the plan is too much broken up to be effective. The Court of Honor is too small to create any great impression. The Court of Arts, marred by a number of unsuccessful towers, is the only stretch of open ground and here there are no *tapis verts*, only an interminable mass of "flowers from so-and-so's seeds." The proposed Electric Tower would have added somewhat to the general composition—for at present there is no point of focus—but it would have closed up the only open space in the grounds, so perhaps it is just as well that circumstances caused it to be abandoned.

In effect the exhibition seems about as big as the Pan-American show at Buffalo, but it lacks both the elegance and gaiety, neither is the planning as *grandiose*, nor are there any works of conspicuous merit, such as the Electric Tower and the court behind it, or the bridge and monumental approaches. Yet it is a place worth seeing and the exhibits contained in some of the buildings are indeed notable. The exhibits in the Fine Arts Palace constitute probably the finest collection of modern work ever brought together.

More Daylight for Recreation

It is not often that a measure of such a startling character as the Daylight Saving Bill is introduced into the English House of Commons. The fact that the momentous changes advocated by the bill are proposed by William Willett, a member of the Royal Astronomical Society, suggests that the measure may not be so chimerical as might be supposed. Naturally, the first dispatches relating to the subject were somewhat incomplete, and have led to not a little misunderstanding, both as to the aims of the measure and the manner in which its provisions are to be carried out. Later advices giving fuller particulars show that it is proposed during part of the spring and autumn, and the whole of the summer, to advance the clocks throughout the whole country, moving the working day forward, with a view to including within the working hours a longer stretch of daylight. The change is to be made gradually. At 2 o'clock on the morning of each Sunday in April the clocks would be set forward twenty minutes, the result of which would be that during the first week of April the workingman who usually rose at 6 o'clock would actually rise at 5:40 A.M.; and instead of quitting his work at 5 P.M., he would actually leave at 4:40. During the second week of the month, although he rose by the clock at 6 A.M., by the sun he would rise at 5:20 A.M., leaving his work at 4:20 P.M. During the last week of the month he would rise at 4:40 A.M. by the sun, though still by the clock at 6, and his work would be over by 3:40 P.M. Mr. Willett believes that the change would be sufficiently gradual to prevent its being apparent, or causing any physical or other inconvenience. The total amount of daylight saved in the mean latitude of England would be in April, 23 hours; in May, June, July, and August, 164 hours; and in September, 23 hours—a total for the six months of 210 hours. Among the commercial advantages urged in favor of the change is that railroads, factories and commercial houses which are large users of gas and other artificial light, would realize a saving by these additional nine

whole days of daylight of \$15,000,000; whereas as against the change it is urged that it would completely disorganize the railroad service of the country, besides causing various commercial and other complications of a troublesome character.

To the average individual, however, the most attractive feature of the proposed change is that it would greatly lengthen the spring, fall and summer evenings, and afford a long stretch of daylight for recreation during the most pleasant period of the twenty-four hours. Visitors who have sojourned for any length of time in England or in continental countries in the same or higher latitudes, have appreciated the long duration of twilight during the summer months, darkness not setting in during the longest days until from 10 o'clock P.M. to midnight. In the more southerly latitude of the United States, the path of the sun across the zone of twilight being less oblique than in the latitude of the British Isle, the period of twilight is much shorter; with the result that even on the longest day of the year darkness sets in soon after 8 o'clock. Consequently, the period of recreation between dinner and dark is so short that there are certain forms of outdoor recreation in which it is not worth while to engage. The advancing of the clock by one hour and twenty minutes, however, would render the spring, summer and autumn evenings the choicest of all periods of recreation, the sun being low and the temperature moderate. It has been suggested that, in view of the delightful conditions which characterize our so-called Indian summer, it would be advisable, should any such change ever be contemplated in this country, to restrict it to the four months from August to November inclusive. The advantage of a long daylight evening for such sports as yachting, rowing, golf, tennis and automobiling, are indisputable.

After all is said and done, however, whether the English measure be passed or not, it is unlikely that any daylight bill of this kind will be introduced into the United States, at least for many decades to come. Tradition, habits and a hundred settled usages, national, commercial, and domestic, will always be ready with a strong protest against any interference with that symbol of unchanging order, the clock.—*Scientific American*.

Effects of Damp on Chimneys

In the *Gesundheits-Ingenieur*, Professor Nussbaum calls attention to the influence of the weather on the exposed walls of chimneys, and he shows that great injury is caused to the draft by the percolation of moisture, and by the neglect of precautions to render the outer walls impervious. He therefore advocates the employment of a damp-proof coating on the exteriors of all chimneys, and the addition of a hood or covered cap at the top, so as to exclude the rain. It is shown that when moisture reaches the inner wall of the chimney much of the useful effect of the up-rush of hot-air current is expended in converting the water into vapor, and, owing to the lateral cooling of one side more than the other, in the case of lofty chimneys, eddies and counter currents are liable to be formed which greatly reduce the draft. The professor states that, as the results of practical experiments, he has found that the cost of protecting the chimney in the manner he advocates will speedily be repaid by improved efficiency.—*Times* (London) *Engineering Supplement*.

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THE efforts of President Cass Gilbert of the American Institute of Architects to increase the membership of the organization appear in every way commendable, and there are to be noted unmistakable evidences that gratifying results will be obtained. Already, in response to the President's appeal, the various Institute Chapters throughout the country are becoming active through their membership committees, and architects of ability and standing who have hitherto declined or neglected to identify themselves with their local Chapters are beginning to realize the advantages of membership. The older members of the Institute have undoubtedly felt for many years that only by means of a thoroughly representative body including a majority of the ablest and most conscientious practitioners in every section of the country could the highest aims of the organization be achieved; and they have also doubtless been conscious of deficiencies in this respect, but it has apparently remained for President Gilbert to counsel and insist upon the adoption of the active and aggressive measures at present being employed to strengthen and build up the organization's membership through the various Chapters.

BUT though new recruits will be found and the membership of the Institute is sure to increase and be strengthened in response to the present vigorous campaign,

which probably is the thing important and desirable, there seems little doubt that the labors of the membership committees are to-day largely made necessary by palpable and flagrant delinquencies on the part of Institute members in years gone by, and extending perhaps unpleasantly near to the present year of grace. Every architect knows of the Institute, and the fact that there are so many able and prominent men in the profession unidentified with it, is in itself a matter which would seem to suggest a look within. No exception can be taken to the professed aims and purposes of the organization, and the rules laid down for the conduct of the members professionally can fairly be considered above serious criticism. Moreover there is an undeniable value in the form of professional standing and ability guaranteed by the mere fact of membership. Why then has not the average member of the Institute a distant advantage over a non-member? He has; and this advantage would become inestimable, and so apparent that all qualified architects would become members unsolicited and inevitably if only a stricter observance of the Code of professional practice were invariably exacted from all members. Unquestionably the majority of Institute members conscientiously practise their profession in strict accordance with the code of ethics prescribed, but it is equally certain that failure to do so does not always, or even ordinarily, result in any particular protest from fellow members, or other untoward consequences on the part of the delinquent. This fact more than any other, in our opinion, militates against the ideal state of universal membership restricted only by qualifications.

THE attitude of government officials toward art and art teaching does not seem to differ appreciably in England and the United States, if we can judge from the reports that reach us concerning the International Art Congress which has been holding its third session in London recently. The British Government's failure to in any way recognize the Congress is attributed by Lord Carlisle, its president, to "extreme stupidity," rather than to intentional discourtesy; but in any event the utter indifference to art on the part of the House of Commons, which appears usual, seems not unlike the measure of appreciation ordinarily shown by our own governing bodies when considerations involving questions of art are presented. The shortcomings of governments in this respect have received rather generous and marked attention by the various conventions of artists and those interested in the various forms of art, but these attentions seem to have failed of much practical effect. Similarly the education of the masses to an appreciation of art has not progressed as rapidly as could be desired. In fact from the utterances at the International Art Congress one might conclude that the time and money that have been spent in an endeavor to instil in the public an interest and appreciation of the beautiful has been in great measure wasted. We do not believe, however, that so gloomy and pessimistic a view is entirely warranted. While it is truly discouraging and deplorable that greater progress is not discernible, it cannot be denied that some progress in the cause of art is being made on almost every hand, and the indefatigable efforts of artists and teachers to inculcate in the masses a feeling and a demand for more beautiful surroundings, cannot fail to eventually effect even the attitude of governments, toward matters artistic.

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SYNAGOGUE ON CENTRAL PARK WEST, NEW YORK, N. Y.

MR. ARNOLD W. BRUNNER, ARCHITECT.

Recent American Synagogue Architecture

By A. S. ISAACS, Professor of Semitic Languages, New York University.

IT is commonly supposed that there is a distinctively Jewish architecture, to which the synagogue, or temple, as it is also called, conforms in every particular, and to disregard which, however lightly, would be flat heresy. Now there could be no greater mistake, for it is exactly the reverse of the truth. There is no special synagogue architecture, even if the interior adopts certain traditional arrangements that may be modified at pleasure. The Jew is too sensible and practical, especially in America, to worry about heresies in far more vital lines than the building of a synagogue.

Tourists abroad who are at all interested in the subject can readily convince themselves as to the diversity in synagogue architecture. You can find all styles represented—Byzantine, Romanesque, Gothic, Moorish, Renaissance, and occasionally Classic, in all their distracting variations in the chief centers. No better proof could be given of

Jewish catholicity of taste. The new examples that are so rapidly spreading throughout Europe—for instance, the latest in Posen, Hamburg and Frankfort—show generous appreciation of modern requirements. Such a renaissance, as it were, was only possible in the past half-century or more when restrictive laws were softened or abolished and the Ghetto walls were razed.

It is to be expected that in the United States where the atmosphere is so charged with freedom that all creeds have attained a marvelous growth, the synagogue should receive its broadest development and its architecture be wholly untrammelled. Here, if anywhere, there is no room for exclusiveness in design or treatment, here no arbitrary individualism uncalled for by the modern spirit. In the variety of church architecture, often bewildering and not always to be commended, the synagogue adopts a similar policy, with as bewildering examples of all

schools, not always to be commended. Neither church nor synagogue has as yet attained a consistent American style, if that is at all possible or desirable.

It is of much interest to find that the keynote of the American synagogue was struck by the Touro Synagogue, of Newport, R. I., erected in 1763, when that town bid fair to prove a rival of New York. The architect, Peter Harrison, was a notable figure in his day, and the Colonial style was adopted with happy effect. Still preserved intact by the generous provision of its founder, it symbolizes unconsciously that spirit of adaptiveness to environment in externals which is one secret of Judaism's survival for so many thousand years. Any other style, however faithfully adhered to, would have been obviously out of place in a patriotic community feeling common impulses that were to lead to momentous results, and at an era, too, when the American Republic was in its formative stage. That little Newport edifice, with its white columns, cornices, pilasters, and balustrades, is the oldest Jewish place of worship in the land. The next in point of age, contrasting markedly in size and design, is the synagogue at Charleston, S. C., erected by Lopez in 1840—an imposing building in the style of a Doric temple. The Greek architecture adopted suggests the cultured taste of the community, then one of the largest and most representative in our country. Its prominence was sadly affected by the Civil War, and it has never been regained; but the old synagogue, with its garden in full bloom, still resounds with the prayers of the faithful.

What has become of other historic synagogues in New York, Philadelphia, Savannah, Richmond, Mobile, etc.? Frequent changes in site, due to the encroachments of business, fire, and decay, have led to their gradual

disappearance. In many instances these were of dignified character. This unavoidable fate has met most of the edifices erected in the chief cities in the decade after the Civil War, when the Gothic and the Moorish were the most popular styles.

Up to recent decades the Moorish, with all its variations, continued to be the prevailing style. It was supposed to emphasize the Orientalism of the synagogue, although a Chinese pagoda or an Indian bungalow would have been just as Oriental. There could have been no

greater anachronism than such a design on the banks of the Hudson or the Mississippi for a people of many wanderings and to whom the stay under the Caliphs of Spain, however glorified in legend, was but one stage in a continuous pilgrimage. It served undoubtedly to strengthen the impression that the Jew was necessarily an alien, and did not wish to be regarded as an American. The delicate minarets, the stately dome, the arabesque decorations, and the rest, were to be a protest against Yankee notions.

About a decade ago—in fact, less than a decade—the classical movement began, or, rather, was revived, in American synagogue architecture, judging from the Charleston example and the Touro Synagogue in New Orleans,

which has just been leveled. This style has been warmly defended by Mr. Arnold W. Brunner, who has designed a number of notable temples in New York and elsewhere. He claims that the Greek-Roman style was the one in vogue in Palestine after the final fall of Jerusalem, as far as one can infer from the ruins in Galilee (thirty-three sites of synagogues have been discovered by the Palestine Exploration Fund), with their unmistakable columns and masonry. Hence, as the style historically associated with the synagogue, it commends



THE ARK, TEMPLE ISRAEL, NEW YORK, N. Y.

Mr. Arnold W. Brunner, Architect.

itself as the one most distinctively Jewish or national, so to speak. There is a dignity and a spaciousness about the Classic style which lends itself easily to synagogue requirements, but whether its association with early synagogues in Palestine adds to its effectiveness in America is a subject which can give rise to different opinions. Its simplicity undoubtedly is a good point in its favor, as contrasted with the Spanish-Arabic or other florid styles. It has been adopted by many Christian Science churches, which may be in the way of its wider acceptance by the synagogue.

The interior arrangements of the synagogue, which are traditional, although they are not always insisted upon with literal exactness, would appear somewhat to hamper the architect. For instance, the building is rectangular—the cruciform is rare—with the ark, or receptacle for the scrolls of the law, at the eastern end, opposite the entrance. In the center, or often at the eastern end, is the reading desk or platform, with or without a separate pulpit. Among the strict conservatives the gallery is for the women, reached by staircases from the

the theater or concert hall, rather than the place of worship. Yet the question of aesthetics is relative, and there is no tangible reason why it should be a canon of piety that worshippers should be uncomfortable or even freeze, as is possible in some European churches. The syna-

gogue interior, however, admits of satisfactory treatment—more, perhaps, from the decorative than the purely architectural point of view. The new Boston Temple Israel, in the Egyptian style, is impressive in design, so far as the exterior is concerned; but the interior is incongruous, if it is not presumptuous to criticise such clever artistic work, because of its Egyptian character and ornamentation. In general, in the exterior the archi-

tect is less hampered and has free scope. In America, in the nature of things, a synagogue cannot be an Egyptian temple any more than a miniature Alhambra, even if there are some who appear convinced that it may approach in design the grace and strength and dignity of a Greek fane.

The rapid erection of so many costly new temples, East and West, North and South, is a tribute not alone to



SYNAGOGUE AT CHARLESTON, S. C., BUILT 1840.



INTERIOR OF TOURO SYNAGOGUE, NEWPORT, R. I.
Peter Harrison, Architect.



SYNAGOGUE AT ATLANTA, GA.

outer vestibule, while for the men benches are arranged on each side of the main floor. In the newer structures and in more progressive congregations, family pews have been introduced; in many the seating arrangements include cushioned chairs and spacious aisles, suggestive of

the generous munificence of these communities, but to their religious earnestness as well, in an age which is falsely termed materialistic. These synagogues include some magnificent additions, as a class, to local architecture, and vie with the leading churches, which are spread-

ing with similar rapidity. The increased attention paid to the religious school is proved by the light and well-ventilated class-rooms, with the best and latest equipment, and no longer relegated to the dark basement of an edifice. Besides the educational needs, the social needs receive careful attention, with parlors, reception rooms, library, kitchen, and occasionally gymnasium and bowling alley. Under such conditions the modern synagogue



TEMPLE ISRAEL, OMAHA, NEB.

becomes a center of activity along lines other than worship, and the congregation is made an organic whole, under the leadership of some energetic and public-spirited rabbi, with its capacity of growth and usefulness greatly increased.

Among the cities which have added new and well-equipped modern temples within the past year or two have been Atlanta, Boston, Cincinnati, Detroit, Louisville,



SYNAGOGUE AT BOSTON, MASS.

C. H. Blockall, Architect.

Mobile, New York, Omaha, Philadelphia, Pittsburgh, Seattle; while Kansas City, New Orleans, and St. Louis are about completing superb structures. In Kansas City the services of Lafarge have been secured to beautify the stained-glass windows. Such edifices, as may be inferred from the illustrations, offer favorable comparison with the places of worship of other creeds.

What of the future of American synagogue architecture? What form is it likely to assume? Will it leave the beaten path, cease to be eclectic, and create its own style at last? These questions are closely connected with the future of American church architecture in general. In the blend of styles, as in the blend of population, the resultant architecture is apt to be a composite. There are sturdy advocates of the Gothic for the church and of the Classic for the synagogue as best expressive of the aim and character of each. It is impossible, of course, to forecast the future, but, judging from its past and the increasing trend towards unity and fellowship among the creeds, we may confidently anticipate that the synagogue will wisely adopt in its architecture whatever will strengthen its power for good and enable it better to occupy the position assigned to it by its ancient prophet as "a house of prayer for all nations." With this wider scope and aim, the moral architecture of the worshipper will be more vital than the anise and cumin of forms and symbols in stone, marble or concrete.

New York University.

ABRAM S. ISAACS.

Achæological

EXCAVATIONS AT PHAISTOS.

An interesting report upon this season's excavations of the Italian Mission at Phaistos, in the south of Crete, has just been published. It will be remembered that the Italians began work at Phaistos eight years ago, and discovered a large palace there similar to that excavated by Mr. Arthur Evans at Knossos. During the present season, which began in May, an entirely fresh wing of this palace has come to light, consisting of a number of rooms. It is thought that further excavations will lead to the discovery of another entrance to this great building, whose area now measures 11,000 square metres. One of these newly-excavated rooms was found to contain a large terracotta disc, on either side of which is a lengthy Mycænæan inscription, said to be the longest yet unearthed, and consisting of no less than 240 different signs. These signs appear to have been impressed upon the disc with movable characters while it was still soft, and the inscription is surmised to refer to some great victory. The Mission has also discovered the remains of two temples, one Archaic, the other of the Græco-Roman period, on the hill of St. Elias, in the province of Pediada; an inscription has made it possible to identify the second with a temple of Diana. During the next few days work will be resumed at the Akropolis of Prinias, where a third temple remains to be excavated thoroughly.

IMPORTANT DISCOVERIES AT ROME.

Two important discoveries have just been made at the Catacombs of St. Calixtus and in those of St. Sebastian, on the Appian Way. Excavations made in a vineyard adjoining the former have brought to light a large tomb beneath the pavement of a small basilica, and it has been surmised that this is none other than the last resting place of the Pope Zephyrinus, who died in the early part of the third century, and of the celebrated martyr Tarsicius, who is stated to have been buried in the same grave as the Pope. Commendatore Marucchi is, however, of opinion that the tomb may rather be that of the two martyred brothers Marcus and Marcellianus. The recent researches in the Catacombs of St. Sebastian have given us some ancient frescoes representing Paradise.—*The Building News* (London).

The Gift of the American School Children To Paris

In the Place du Carrousel, within the Court of the Tuileries, probably one of the most coveted sites for a work of sculpture in all Paris, will soon be unveiled the equestrian statue of General the Marquis de Lafayette, the last work of the gifted American sculptor, Paul Bartlett, and the gift, under the auspices of the Society of the Daughters of the American Revolution, of the school children of America.

The American resident in Paris and the American tourist will no longer suffer his national pride to be wounded by sight of the bronzed plaster cast that has surmounted the pedestal since 1900, as it will give place to the completed work.

It was during the exposition of 1900 that this plaster cast was put in place. At that time the movement to erect the statue took definite shape, and the monument in its incomplete condition was dedicated on Decoration Day, 1900.

Criticisms of the sculptor's tardiness in completing his work have been made by persons who do not know the slow and thoughtful process by which works of art are brought to a successful conclusion.

Describing Bartlett's work on this equestrian figure, Lorado Taft, in his admirable work on American Sculpture, writes as follows:

"In a secluded studio at St. Leu, a village some fifteen miles to the north of Paris, Mr. Bartlett lived almost a hermit's life, working upon the model of this statute like a day laborer from early dawn until the light failed at sunset. Here he studied his favorite horse, a beautiful

creature; here he developed his idea of the young Lafayette and familiarized himself with all the elaborate details of costume and equine accessories of a century and a third ago. The customary steps were made with unusual precision.

"First, the preliminary sketch, a few inches in height, was doubled in size. This more careful study was then reproduced, with many alterations, in still larger form—

a figure upon which the artist put a great amount of labor."

Since that day Mr. Bartlett has put further and more careful study to his work, until at the end of seven years he has produced a result that is a credit to American sculpture and worthy of the dignified surroundings it will have.

St. Gaudens, it is said, took fourteen years to complete his statue for the city of Boston, and the sculptor of the Joan of Arc worked twelve years on it before he was willing to pronounce it finished.

Bartlett in describing his work and his intentions, has said: "Lafayette is represented in the statue as a fact and a symbol, offering his sword and services to

the American colonist in the cause of Liberty. He is shown sitting firmly on his horse, which he holds vigorously. He is attired in the rich embroidered costume of a noble officer.

"His Flemish steed is represented with its mane knotted and tail dressed in the style of the time. Lafayette's youthful face is turned towards the West, his sword being slightly uplifted and delicately offered. He appears as the emblem of the aristocratic and enthusiastic



LAFAYETTE.

Paul Bartlett, Sculptor.

sympathy shown by France to our forefathers. His youth, his distinction, his noble bearing, the richness of his costume and of the trappings of his horse—everything serves to emphasize the difference of his race and his education. An equestrian statue of Lafayette is appropriate, for after landing in South Carolina he rode

from Charleston to Philadelphia on horseback, and there offered his services to Congress."

The pedestal which so fittingly supports this equestrian statue was designed by Messrs. Carrere & Hastings, architects, through whose courtesy we are able to present the working drawings.

As a German Sculptor Views New York's Architecture

A correspondent of the *New York Post*, writing from Berlin, tells interestingly of the impressions of architecture in America, of Professor Gustav Eberlein, who is the favorite sculptor of the German Kaiser.

While Professor Eberlein enjoys the favor of his royal master, whose ideas on art he must necessarily concur in, it is stated that he is not so thoroughly in sympathy with the mass of German art lovers. His views of American architecture can be said to indicate about what Emperor William would think of us. The article referred to is, in part, as follows:

As is well known there exists a wide difference of opinion between Emperor William and the great majority of his subjects with regard to art and artists.

One of the sculptors of modern Germany of whom the Emperor thinks highest is Professor Gustav Eberlein. He is responsible for many of the groups of statuary with which the Kaiser has decorated the Tiergarten.

Professor Eberlein was the author of a number of statues in the Siegesalle, an avenue in the Tiergarten lined with statues of the Kaiser's ancestors.

In all his works Professor Eberlein seems to hit off the Kaiser's taste in sculpture, and, therefore, his views on such subjects might be said to coincide with those of his Imperial patron. Professor Eberlein, recently re-

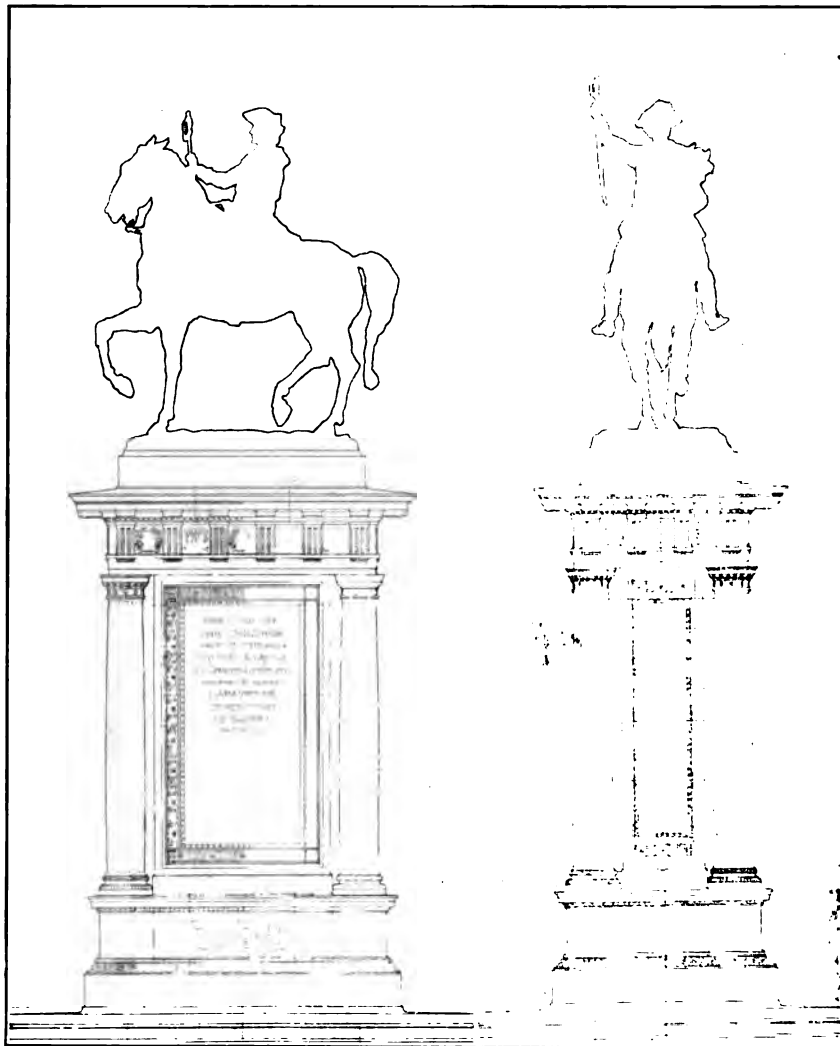
turned from a trip to America, has written in the *Vossische Zeitung* a critical appreciation of the cultivation of the fine arts in the New World. It is interesting to reflect that American art would make on the Emperor William much the same effect as it made on Professor Eberlein, and what I know of the Kaiser's canons of taste in art would almost justify this rather reckless assumption.

The architecture of New York is Professor Eberlein's first subject, and about it he has

some interesting remarks to make. "New York's architecture," he says, "is pre-eminently classical, and every style of France from the Kings down to the Emperors is represented. The more recently finished monumental buildings are redolent of this style as well. The architects have largely copied from Italian, Spanish and mediæval palaces, but have spoiled their effects by hemming in their creations in narrow, dirty streets.

"A number of buildings, beautiful in themselves, pearls of splendid architecture, lose their charm, notwithstanding their costly materials, by their unsuitable sites and are scarcely noticeable."

He thinks that the future of the "skyscraper" will bring with it a "monumental style" which will overcome all the difficulties of building in America's crowded cities. He finds that the rough physiognomy of the skyscrapers on Wall Street and along the banks of the Hudson has a peculiar attraction. The monster masses, rearing their picturesque roofs to heaven in the twilight of a winter day and lashed and swept by the snowstorm, have a dis-



PEDESTAL, LAFAYETTE MONUMENT.
Messrs. Carrere & Hastings, Architects.

jointed splendor which all the architectural elegance in other buildings cannot convey.

Turning finally to sculpture, about which he is the most qualified to speak, Professor Eberlein refers to the lack of sculptors in America. Four groups upon which Daniel Chester Trench is now working Eberlein holds to be the best in New York. Borglum receives the characteristic comment that he seems to be greatly under the influence of Rodin, but is nevertheless highly gifted. The mailed fist guided the pen that wrote those words, too.

Central Park did not please the professor at all. He thinks it is spoilt by a number of "appalling" statues and groups. This is what he would suggest: "I should like to be allowed to build for this unique park a monumental gateway, a triumphal arch, dedicated to the great men of America, backing towards Saint-Gaudens' equestrian statue. In the square upon which Fifth Avenue debouches I would set up a huge bronze fountain with a lofty jet. And thus the splendid main avenue, which is without an equal in the world, would end suitably."

Artificial Lighting of the Roman House

The palatial luxury of many of the innumerable villas with which Italy was once crowded may be fairly well pictured in imagination from the incidental allusions to these structures which appear in the works of the ancient poets, and from the special descriptions of the domestic architecture of the period contained in the writings of the historians of ancient Rome. Indeed, the old literature of the Eternal City affords sufficient indication of the architectural magnificence of the stately home of a Roman patrician to dazzle and astonish the present more prosaic and utilitarian age. But, enshrined as they were, amidst charming surroundings, of which statuary, paintings, mosaics and fountains formed a very customary part, the living-rooms of a Roman villa could have been, on occasions, anything but comfortable, owing not only to the inadequate arrangements provided for the diffusion of artificial light, but to the fact that no means was then known of preventing the smoking of the lamps which formed the illuminating medium.

In the earliest times the rooms were lighted by means of pans filled with chips of resinous wood tied together with bands of bast, but afterwards light was supplied by torches, the cases of which, formed of metal or clay, were filled with resinous substances. Dry wicks of linen, or oakum, dipped in wax or tallow, were also much used for artificial lighting in the early days of Rome.

The invention of oil-lamps caused a revolution in the hitherto accepted methods of lighting, and soon after their general introduction they began to be constructed and ornamented in an almost endless variety of ways. The lamp consisted of two parts, (1) a saucer, or receptacle for the oil—round, oval or angular in shape—which was often covered with a lid having a perforation for pouring in the oil, and (2) the wick holder, or rostrum, which took the form of a projecting socket. Sometimes a second hole was pierced in the surface of the oil vessel through which the wick could be pushed by means of a needle. Portable lamps were constructed with handles, and those that were intended to be suspended were provided with two or more ears to which light chains could be attached. Lamps made to contain any number of wicks from one to twenty were thus either hung from the roof or set upon a lofty stand.

At first only made of clay, the generality of their use caused the manufacture of lamps to become an important feature of the Italian pottery trade, but afterwards lamps of bronze and other metals, alabaster, and, still later, of glass, became common.

Many of the Roman lamps were profusely decorated on their surfaces and handles with ornamental reliefs and modelings of varied character, and were veritable works of art, bronze lamps in particular being especially distinguished by the artistic nature of their design. Suitable implements, often fastened by a chain to the lamp handle, were provided for trimming the wick, and small vials for filling the lamp with oil were sometimes also attached to the lamp itself.

The word *candelabrum* was originally applied to a lamp furnished with a metal point, on which a taper *candela* was fixed; but after the use of lamps had become general, the term was used to designate the wooden or metal support composed of a base, a tall thin shaft and a disc, on which the lamp was placed. Sometimes the *candelabrum* was fitted with a simple apparatus for raising or lowering the lamp, in which case its shaft was hollowed and fitted with a movable rod supporting the arms or disc, which could be fixed, by means of bolts, at any requisite height.

Like the lamps themselves, the *candelabra* were made in diverse shapes and ornamented in a number of different ways, and many of the designs were of extraordinary grace and beauty. In addition to the small portable ones in general use in Roman houses, which were usually either set on a stand or placed upon the floor, many of the temples and palaces were adorned with massively constructed *candelabra* which, shaped like columns and profusely enriched, were placed upon elaborately decorated pedestals.

The *lampadarium* (lamp-bearer) was merely another form of the *candelabrum*. It had no disc, but it was provided with arms or branches corresponding with the number of lamps it was intended to carry. Until the introduction of glass, lanterns made of transparent material, such as oiled linen, talc and horn, were in very general use.—*The Builders' Journal* (London).

A Scholarship in Architecture

in Washington University, St. Louis, Mo., of the Architectural League of America

Washington University, St. Louis, Mo., offers to members of the Architectural League of America a scholarship in architecture. This scholarship will entitle the holder to free tuition during one year as a regular student with preference for reappointment for three additional years. Candidates must be prepared to satisfy the regular entrance examinations for the freshman class. This scholarship will be awarded to an applicant, prepared as above, who can show special fitness to study architecture. In case there are several applicants, their relative fitness will be determined by a short competition.

Candidates must send their applications for the scholarship by September 5 to the Chairman of the Committee on University Scholarships of the Architectural League of America.

It is suggested that candidates send for a catalogue of Washington University, and also communicate with the Professor of Architecture in regard to entrance requirements.

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WE have recently had called to our attention what might, it seems, properly to be considered a lamentable tendency on the part of certain architects (few in number we believe, and not in any way representative of the profession, we are quite certain) to regard the work of designing suitable foundations and structural members for a building, and also the determining of the heating and ventilating plant, as well as the sanitary and electrical equipment, as mere matters of routine, that can safely be left to the judgment and discretion of obliging but hardly disinterested contractors for the various branches of the work. The results that have attended the execution of some notable works undertaken in harmony with this idea should be a sufficient answer to any argument in its favor, but other and equally potent reasons for deprecating the practice are obvious upon very little consideration.

WHILE we are keenly sensible of the technical ability possessed by many contractors engaged in the various branches of construction work, and believe that architects do well to avail themselves of it to the extent of giving careful attention to trade literature published, and also to the statements and representations made by men, many of whom possess an enviable skill and knowledge gained by practical experience, the act of placing a client's interests as represented by the cost, efficiency or general suitability of any branch or portion of a building, in the hands of anyone who does not receive his sole remuneration directly and openly from either architect or client, and whose interests are not most com-

pletely served by securing the best possible structure at the least possible expenditure consistent with existing conditions, can hardly be considered otherwise than censurable. Indeed, the relinquishment of any portion of the authority and control of the work which belongs inherently to the architect's position as commander-in-chief, and which he must relinquish, in fact if not in form, by availing himself of the gratuitous services of contractors, can hardly be regarded otherwise than inimical alike to the best interests of the profession and those by whom architects are employed.

EVEN the most casual comparison of our Federal buildings erected throughout the United States during the last decade, with those owing their existence to the Government's necessities and the prevailing conditions of preceding years, cannot fail to result in a feeling of much satisfaction. Few, we believe, realize the wonderful improvement which has taken place in this important branch of our national architecture. From the poorest examples of architecture and building to be found in the country, Federal buildings have been changed to rank among the best. In fact, there are more than a few of the smaller cities that have no buildings to compare architecturally or in point of workmanship and materials with those erected by the Government. The value to American architecture of these sane and scholarly buildings scattered throughout the country is inestimable. Probably there is no other influence which has done as much toward determining the character of our architecture during recent years. While there is doubtless little likelihood of our Federal buildings ever again deteriorating to the characterless structures that once discredited us, any change that gave promise of disturbing present conditions in the office of the Supervising Architect of the Treasury would, we believe, be viewed by architects generally with some apprehension.

IN the exceptional efforts that are being made in all quarters to increase the membership of the A. I. A. it is hoped that at least usual care will be exercised in the examination of the applicants' records and attainments. Instances have not been entirely lacking, even before the present membership campaign was inaugurated, in which humble members of a Chapter have been somewhat startled by receiving a list of applicants for membership containing the name of a practitioner notorious for his unprofessional conduct, and woefully deficient in real professional ability, yet recommended by architects of the highest standing. Consequently no protest is made and the member is elected, but unquestionably at the price of a distinct loss in prestige, on the part of the organization. While an increased membership is essential to the greatest success, an effort should be made at the same time to improve the average character and standing of the Chapter. An organization is invariably judged by the character, ability, and standing of its individual members, and, unjustly or otherwise, the estimate of worth appears oftenest made up from the record of the most unworthy representative. Perhaps no complaint should be uttered even so, for had not the weakest member been examined and accepted? If the test applied to every applicant was "Are we as a body content to be judged by the measure of this man?" it is possible that in increasing the membership of the A. I. A. no considerations of charity or goodfellowship will be allowed to weigh as against professional ability or the lack of it.

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SWIMMING POOL AND PAVILION

GEORGE R. THOMPSON, CORNELL UNIVERSITY

Some Examples of Work in Design At the College of Architecture, Cornell University

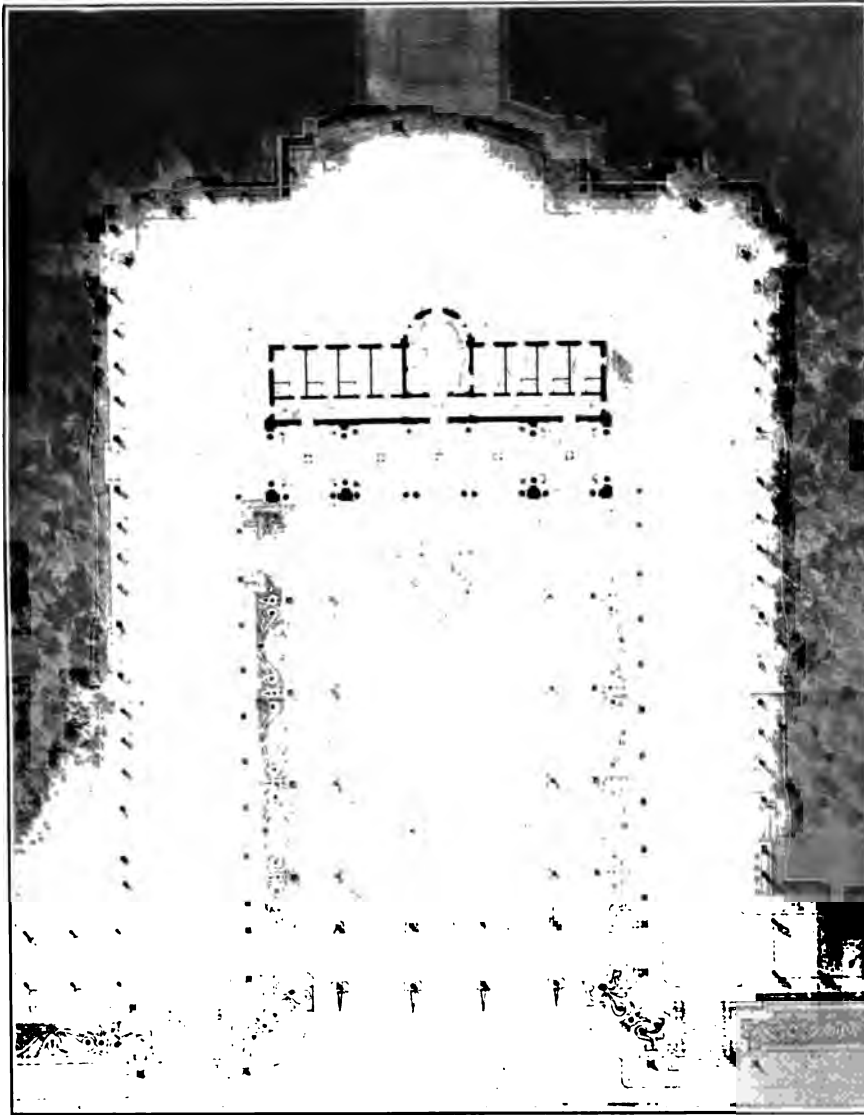
By ALBERT A. PHELPS, Assistant Professor of Architecture.

DESIGN at Cornell is looked upon as the most important course in the curriculum of the college. To describe the work in design would mean to discuss not only the courses so designated, but much of the work in construction, freehand drawing, and art criticism, which would exceed the scope of this paper. However, that we may gain a somewhat adequate idea of the character and methods of instruction, the work in design may be considered as comprising two groups, expression and composition. The first includes freehand drawing, drawing from the antique and from life, modeling, sketching from nature, elements of architecture, shades and shadows, and perspective. The aim of this work is to train the eye to a sense of form and color, the hand to steadiness and delicacy of touch, and the judgment to a nice distinction between values. In all

of this work the attitude of the architectural student is precisely that of the sincere art student. False, exaggerated effects for the sake of attracting attention are discountenanced, but vigorous, effective presentation of architectural ideas, in harmonious tones inspired from nature, are heartily encouraged.

Architectural composition is taught by means of a series of problems in design throughout the second, third and fourth years. The design of the second year is usually referred to in the college as second-class design, and that of the third and fourth years as first-class design.

The problems issued in first-class and second-class design include both major and sketch problems; the former, of which about six are issued during the year, require from three to six or seven weeks for their solution, and the sketch problems, of which about eight are issued,



PLAN, A SWIMMING POOL
AND PAVILION

GEORGE R. THOMPSON
CORNELL UNIVERSITY

are completed in a day or two. When a major problem is issued the student is given twelve hours in which to prepare his preliminary sketch. In this he indicates simply but clearly the principal motives of his design, and to this he must adhere in the execution of his finished drawings.

In the development of the design from the preliminary sketch, the student is allowed much latitude with respect to style and treatment of detail; the idea being to encourage individuality, rather than to reduce the work of the college or of a class to uniformity in character or presentation.

In the judgment, for which the faculty of the college constitutes the jury, each member of the faculty pays particular attention to that part of the work which is the result of his special teaching. For example, the professor of construction studies the designs to determine whether or not they admit of direct and rational construction, while the professor of freehand drawing criticises the sculptural details and the general color schemes of the designs. Thus not only do the drawings receive careful criticism, but the professors are able to follow the results of their teaching, while all in the faculty maintain a lively interest in the progress of architectural design.

As often as is practicable, the professor of design issues, instead of one of his own problems, the current problem of the Society of Beaux-Arts Architects. This is completed, judged and graded in the same way as are the ordinary problems; and then the best designs are sent to New York to enter the wider competitions with solutions of the same problem from other schools and from individual draftsmen all over the country. The effect of the Beaux-Arts competitions in arousing enthusiasm and intensifying the competitive spirit among the students has been uniformly excellent.

The program of the problem, "An Out-of-Door Swimming Pool and Pavilion," that issued by the Architectural League of New York for its 1907-1908 competition and also a regular program of Class A issued by the Society of Beaux-Arts Architects, was as follows:

The site for this is supposed to be one having a beautiful view toward the south, on ground with an ascent of about 5 per cent. toward a wooded background to the north.

A. *Architecture.*

The pool, of approximately 60 feet in width and 100 feet in length, is to be placed so that three sides are screened either by the building, or enclosing wings, trellises, or planting, leaving the fourth, or south, side open to the view.

At the north end of the pool, facing this view, is to be placed a pavilion containing a shelter for

spectators, a small reclining-room, and three or four dressing-rooms for ladies, and a like number for gentlemen, together with toilets, small drying-room with lockers for towels and bathing suits, and a pantry for serving tea and other light refreshments.

The architect's design may include lateral trellises or wings, with appropriate landscape planting to form a frame and screen for the pool and pavilion, which should be so designed as to afford a large open loggia or room facing the pool and the distant view.

B. *Sculpture.*

The source, or fountain, from which the water is to be fed to the pool is to be located at the north end, in front of, or within, the pavilion, and should be the chief, if not the only, sculptural ornament in the composition, and is to form the subject for the award of the Avery Prize for Sculpture.

C. *Mural Painting.*

The decoration of the open room, or loggia, facing the pool should consist principally of appropriate mural paintings. These may include the ends as well as the back wall, and should be designed to allow for not less than two doorways. The decoration of these walls is the

subject for the President's Prize for Mural Painting.

D. *In General.*

While the size, material and elaboration of the structure, together with its embellishments, are to be determined by the competing artists, the program is meant to be a practical one, and the scheme submitted should not be so extravagant as to put its actual execution beyond possibility, or the reach of any but extremely wealthy owners.

The drawings, models and sketches required are as follows:

Architecture.

Plan. Scale $\frac{1}{8}$ inch to the foot.

Section of pavilion on longitudinal axis of pool, $\frac{1}{4}$ inch to 1 foot.

Elevation of pavilion facing pool, scale $\frac{1}{4}$ inch to 1 foot.

Small perspective sketch of ensemble.

Twelve hours' time was allowed for the preliminary sketch, and four and a half weeks for the study of the problem and rendering the final drawings.

The program of the problem, "A Club House for an Art Society," also a regular Class A plan problem of the Society of Beaux-Arts Architects, was as follows:

A CLUB HOUSE FOR AN ART SOCIETY

This club will comprise two distinct parts:

1st. On the first floor, the club proper, with the general service rooms in the basement, but lighted and ventilated by an area.

2d. On the second floor, several large galleries and Exposition Hall, to be opened to the public at certain times. The public will have access to this floor by a special entrance.

The divisions of the club are as follows:

Entrance hall, conversation room, restaurant room, library, newspaper room, smoking room and bar. Card room, toilets, cloak and check room, pantry, etc. In the basement will be placed the billiard room, baths, barber shop, bowling alley, kitchens, etc. There will be service stairs and stairs for the members of the club.

The lot is square at a corner formed by two intersecting streets, one side of the ground measuring 150 feet, the building being placed 20 feet back from each street. The two other sides of the lot are limited by party walls.

For the preliminary sketch there are required plan of the first floor, elevation on one of the streets and section, at scale of 32 feet equal to 1 inch.

For the rendu give the first and second story plans, section and elevation at $\frac{1}{8}$ ".

Twelve hours' time was allowed for the preliminary sketch and seven weeks for the study of the problem and rendering the final drawings.

This building is to contain:

On the ground floor (street level)

Entrance, ample stairs, offices for administration, dressing and locker rooms, showers and small swimming pool.

On second or main floor.

Gymnasium as large as possible, with running track to be used on occasions of athletic exhibitions as gallery for spectators. Part of the floor space should be screened off for boxing and fencing rooms.

The elevation should be treated monumentally and be made as expressive as possible of the use and purpose of the building.

The lot, located between party walls, is 100 feet on the street and 75 feet deep, but a strip 25 x 100 should be left at the rear for light and ventilation, making the building 100 x 50.



A SCHOOL OF ARCHITECTURE

WM. BOYD, JR., UNIVERSITY OF PENNSYLVANIA

Architectural Design

At the University of Pennsylvania

By WARREN P. LAIRD, Professor of Architecture.

DESIGN is taught in the University of Pennsylvania with the sole purpose of preparing students to follow their profession. Every subject in the course in Architecture is taught with this end in view, and design offers no exception to the rule.

It is for this reason that every effort is made to keep the mind of the student free from the idea of a necessary submission to this or that artistic creed or formula, and especially to avoid training him as an adept in any special school of art. The whole field of the history of art is regarded as belonging to the architect and no period of this history is set aside as devoid of the materials for study.

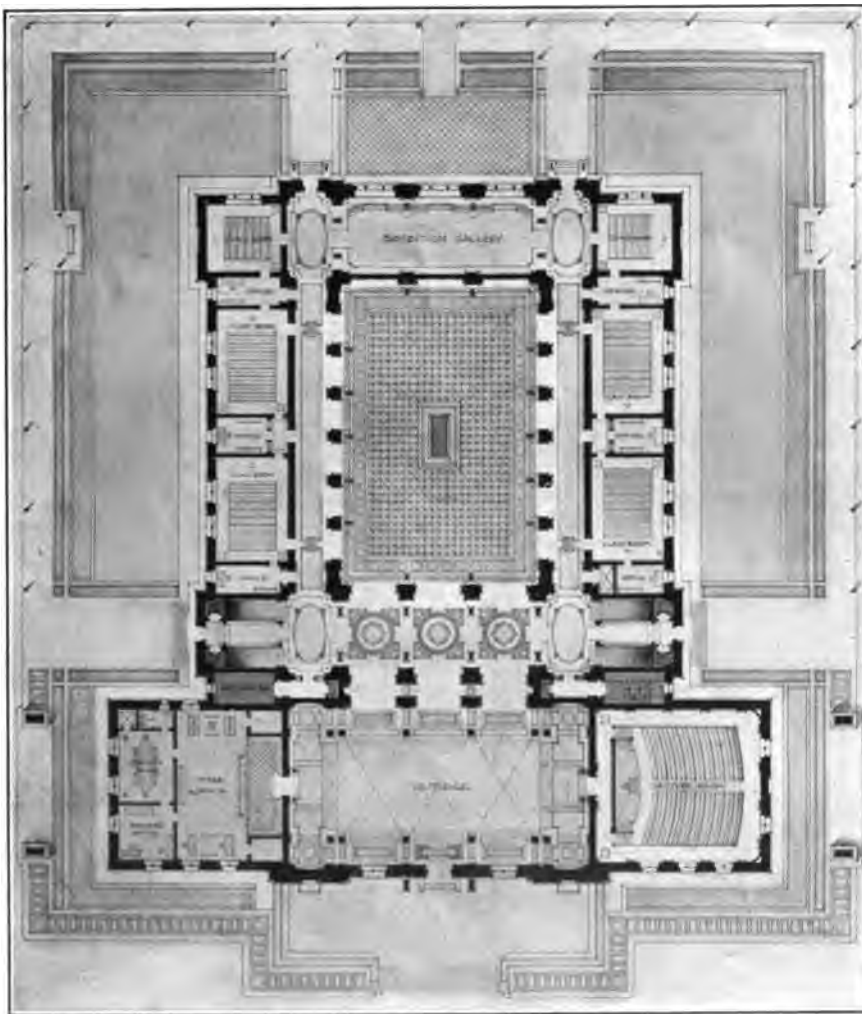
On the other hand, all *theories*, of art in general and of architecture in particular, are carefully restricted to those few general principles which are developed by the application of common sense to esthetics, and which are universally accepted by all cultivated people, regardless of their personal preferences for the form in which these

principles may be expressed. To go further than this is to produce a bad effect on weak and strong minds alike—the weaker finding themselves still less able to impart any personality to their work, and the stronger losing valuable time in ridding themselves of the drag imposed by formulæ upon their powers of initiative. At any rate, we believe that those theories which pretend to give rules for design have never been of any use to any one save to writers or lecturers as a convenient theme to which facts, with some ingenuity, may be accommodated; or as a pastime for that type of mind which is more concerned with placing labels on things than with the things themselves.

Instruction in design begins as soon as the student is able to use his drawing instruments, and continues uninterruptedly during the four years of the regular University course. This policy has been adopted because the faculty of architecture recognize the fact that design is not a science which can be taught in twenty-five or one hundred lessons, but is the development of what artistic sense the student may possess in a latent state—the education of his taste and the opening of his eyes to beauty of form.

Then, as it is clear one does not learn to appreciate beauty of form and harmony of proportion in a few weeks, the necessity of slow and careful training becomes apparent, since, at the University, the student can only learn the first principles of his art, and receive there the first impulses of a long evolution. To be really deep and effective, this passage through successive stages in which one learns how to appreciate some new things and despise others, must be a personal one, else the intellect only, and not the feelings, will be touched and permanently influenced. For every student the experience of others is of no value, his convictions must be based upon his own, if he is to arrive at an understanding of those slight differences of proportion which distinguish the masterpiece from the work which is simply correct.

The method of teaching, then, is not to pour a number of formulæ or axioms into the memory, but to fix the student's mind at once on a programme, to follow his struggles, his miscalculated movements, his efforts toward expressing himself, and to help him slightly by pointing out



PLAN, A SCHOOL OF ARCHITECTURE

WILLIAM BOYD, JR.
UNIVERSITY OF PENNSYLVANIA

how others have solved similar problems; to make him appreciate the simpler solution which one finds after having tried many complicated ones, and finally to call his attention to other possible solutions of his own problem. In short, to put directly into the water the pupil who wants to learn how to swim (sustaining him slightly), instead of keeping him in the class room with text books, however learnedly written.

When men, treated in this way, have sufficiently mastered the elements of design, criticism must, of course, take a higher view of the subjects presented for solution, and views personal to the critic find their place. But these are now inoffensive, for the student is able to discuss them and to defend his personality against that of his instructor. A man of determined personality with strong predilections for a particular phase of expression, is, after all, a bad teacher in art, for he will have pupils who are his imitators in spite of himself. What is needed is a man familiar with all the expressions of art while possessing that versatility which allows him to understand the aspirations of his pupils and to give them a direction that the pupil alone was not able to find.

Subjects for programmes must be selected with this end in view, that students may see their application to real practice; for students have a strong tendency to consider these problems as opportunities for the making of pictures which shall be as pleasing to the eye as possible, rather than the representation of constructable buildings.

After all, the best illustration of what training in design must be is afforded by a comparison with training in the field of literature. Here, when a man knows how to write and to avoid misspellings, he is taught the proper use of words and the proper construction of sentences. He is warned to keep in mind the importance of clarity of expression, and to study the masterpieces of literature—the conciseness and elegance of Latin prose, the harmony of unity of the Greek drama, the vigor of sixteenth century English, and the romanticism of the poems of Burns and Shelley. But he is continually warned not to imitate any one of these masterpieces of literature, as fame comes only to those men who achieve a personality in their works.

Trained in this way, there is only one more thing the fledgling literateur has to do. It is to tell what he has to say as well as he can.



AN ACADEMY OF MUSIC

C. C. RICH, UNIVERSITY OF ILLINOIS

Architectural Design

At the University of Illinois

By JOHN WATROUS CASE, Assistant Professor of Architecture.

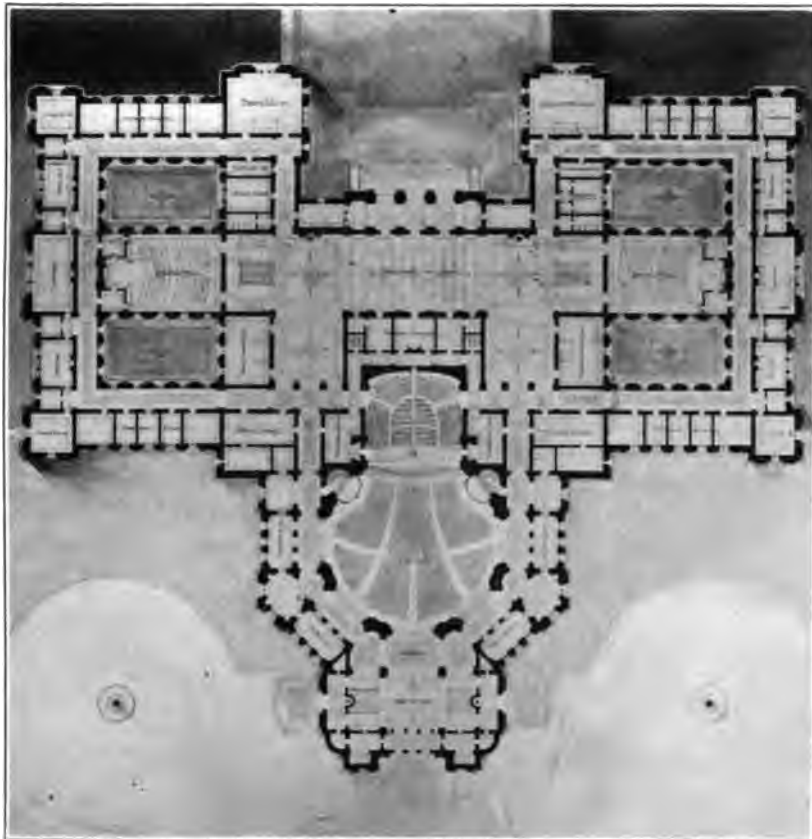
THE study of architectural design in the School of Architecture of the University of Illinois begins in the student's junior year. In the freshman year the student takes 162 hours' work in freehand drawing and 162 hours' work in the orders.

On this basis of draughtsmanship the study of architectural design begins in the junior year with 162 hours' work in architectural composition, a study of basic principles, the proportion of solid and void, of light and shadow; the grouping of masses in plan and elevation; the arrangement of subordinate parts, openings, details. Excellent examples of architectural composition are analyzed and memorized. This course in connection with 432

hours of work in architectural history begins the formation of taste, the appreciation of excellent design, the awakening of the creative imagination.

Accompanying this preparation is 162 hours' work in planning, a study of practical requirements in planning churches, schools, theaters, etc., and 216 hours' work in analyzing and drawing historical sculpture and designing ornament; also 324 hours' work in delineation of buildings with pen and ink and water color.

On this foundation the real work of design begins in the last half of the junior year with 162 hours' work in designing and making rendered drawings in line and with the brush, of small problems involving few parts in plan



PLAN, AN ACADEMY OF MUSIC

C. C. RICH
UNIVERSITY OF ILLINOIS

and simple masses in elevation, and then of problems requiring the expression on the exterior of large interiors.

This work is continued in the senior year with 162 hours' work in Renaissance design. Problems are given involving the grouping of large masses in plan and eleva-

tion, the arrangement of grounds and grouping of buildings and a study of the characteristics of Italian and French renaissance.

Throughout these courses excellent examples of each problem are analyzed, the attention of the student is directed to their excellences and defects. He makes tracings and notes and his vocabulary of design is enriched.

The problems selected are those met by the architect in practice, banks, post-offices, court houses, theaters, churches, academies, etc.

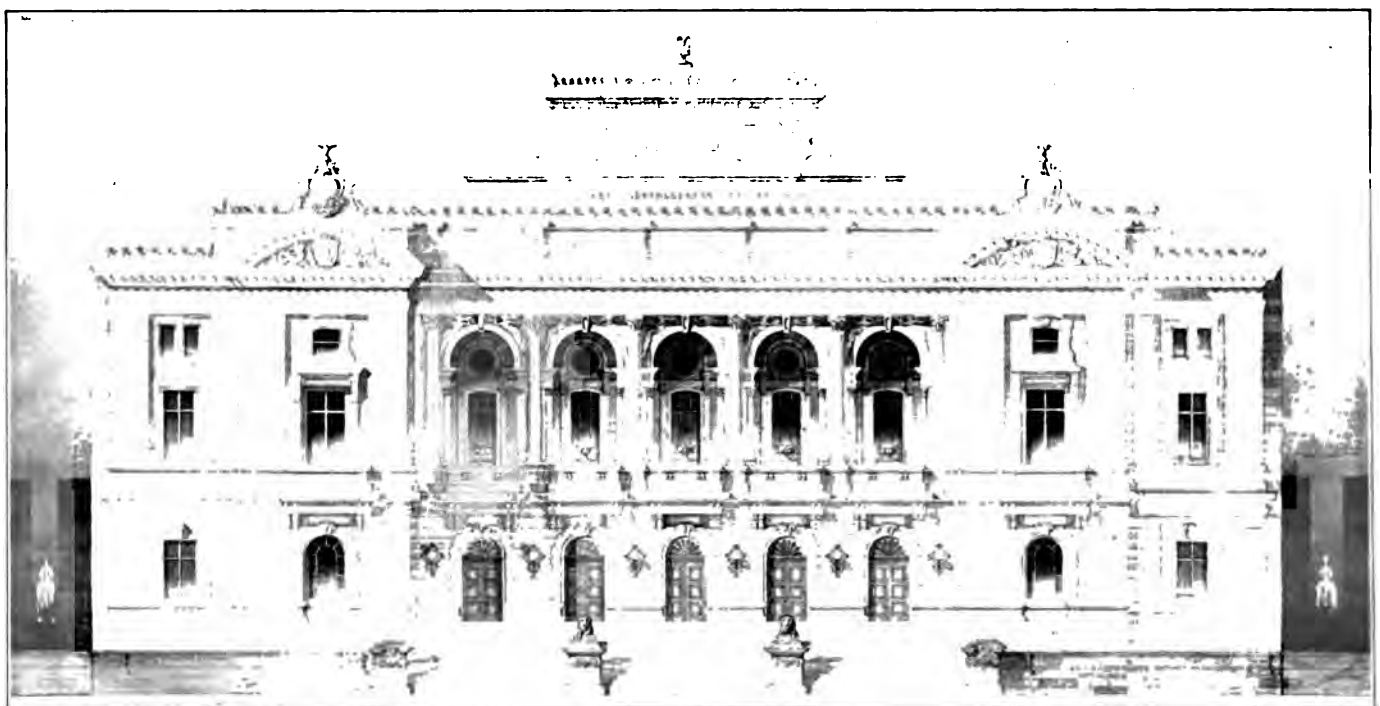
The programs are arranged to give the student every opportunity for an ideal solution. Practical problems are given, ideal solutions are sought. Each problem is hung and every solution criticised so that each student's experience is multiplied by the number in the class.

To develop spontaneity of thought and expression, an all-day sketch problem is given each month and some very excellent results are obtained.

In the first half of the senior year 162 hours' work are given to the study of Gothic architecture—its historical development, forms of vaulting, details, and use of materials. Tracings are made from Pugin, Brandon, Caveler, Colling and other authorities whose works are

to be found in the extensive collection of books in the architectural library of the department.

This forms a permanent collection of tracings, enlarged each year, and enables the student to obtain, at a nominal price, many prints from excellent Gothic examples.



BUILDING FOR A BOARD OF TRADE

D. GRAHAM, UNIVERSITY OF ILLINOIS

Although the time for the study of Gothic architecture is extremely limited, the students succeed in designing some very creditable Gothic churches.

In the latter half of the senior year 324 hours are given to thesis. Each student selects a large problem such as an academy of music or of fine arts, a hospital, an opera house, railroad terminal, etc.

The practical requirements of the plan are studied, the number of rooms, their relative size, the amount of space and the functions of the parts are studied from existing buildings by writing to authorities and from works on the subjects. These results are tabulated, tracings are made at small scale of plans of the best examples of existing buildings of that kind, and these are embodied in a written description of the problem. This data will form the basis of study for some future thesis on the same subject and eventually the problem will be handled in a masterly way.

The drawings are made at large size and rendered with wash in full light and shade, after the method of producing "competition" drawings.

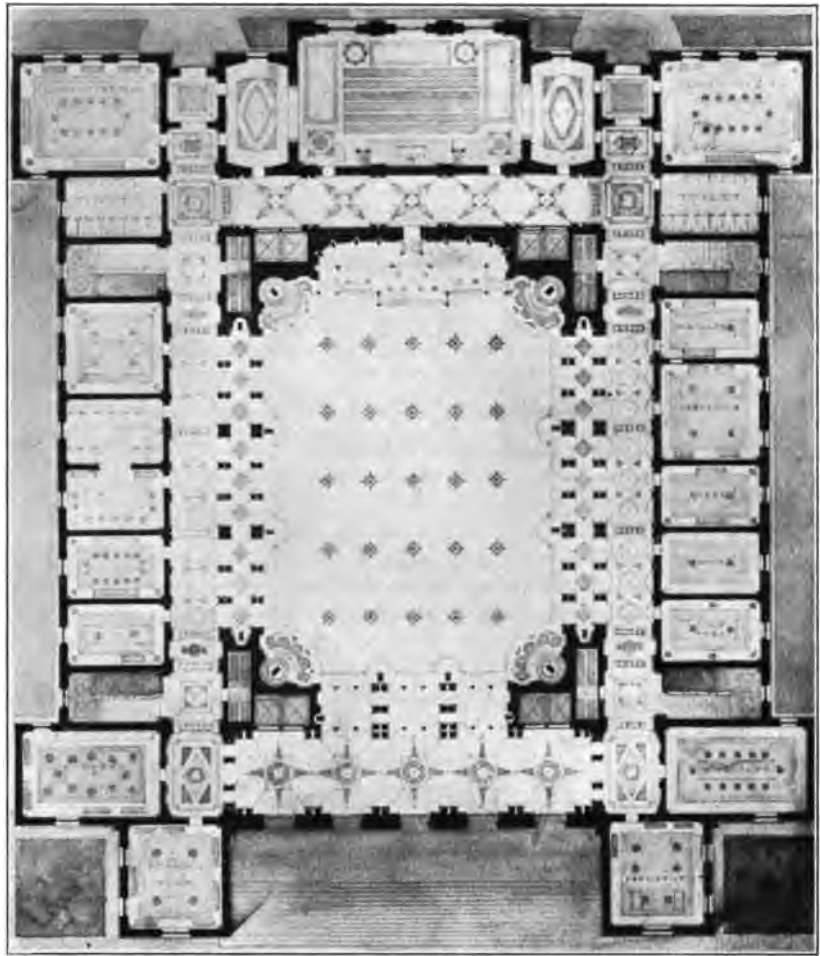
This is a brief description of the courses in architectural design at the University of Illinois. Design occupies but a comparatively small part of the student's time. He receives a thorough training in construction which enables him to pass the State examinations and become a licensed architect. In addition to the course in architecture leading to degrees of B.S. and Master of Architecture a course is given in architectural engineering with same degrees and Architectural Engineer; and in addition to these courses, one in architectural decoration.

Hours referred to consist of sixty minutes each.

Old London Walls.

While excavating for rebuilding at America Square, Minories, London, part of the old London wall has been disclosed, thus proving the contention of antiquarians that the wall ought to be in a certain position, if the calculations in their possession were correct.

The *City Press* of London states as follows: A very fine stretch of the wonderful old work of the Romans may now be seen. The characteristic three tiers of large Roman tiles can be clearly seen, as well as the carefully squared Kentish ragstones, of which the bulk of the wall consists. More interesting still is the chamfered plinth. This consists of blocks of ferruginous sandstone, its reddish brown color being well shown by several chip-pings. This sandstone exterior plinth has been found throughout the entire length of the Roman city wall, but the color and shape where long exposed are not very distinguishable. The plinth is usually from 1 foot to 3 feet above the actual base of the wall, at the point where



PLAN, BUILDING
FOR A BOARD OF TRADE

D. GRAHAM
UNIVERSITY OF ILLINOIS

the wall makes a set-back. The portions in America Square now freshly cleared of earth show both shape and color most distinctly. Principally, however, the desire was to uncover the Roman ditch which ran round the walls. It will be remembered that the ditch was uncovered when the Old Bailey was being rebuilt, but unfortunately some of the most prominent antiquarians interested in Roman remains were not present and did not actually see it. Now, however, the ditch has been seen and very carefully observed. In all respects it conforms to anticipation.

The Cathedral of St. John the Divine in New York City.

Work on this cathedral is proceeding, but it will probably be a number of years before its completion. The sixteen years that have elapsed since the beginning of the work have been devoted to the setting of the deep foundations and the building of one of the four great arches. The piers of the three other arches are built, as are also the columns of the choir. Of the seven chapels proposed, but one is completed, that at the eastern extremity of the cathedral. This chapel, the gift of Mr. August Belmont as a memorial of his mother, is about 30 by 50 feet in size, and is said to have cost a quarter of a million dollars.

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IN contemplating the examples of students' work produced at some of the leading schools of architecture in this country during the past year, a few of which are presented in this issue, one cannot reasonably feel much apprehension for our future architecture. In comparison with the work done at the various universities a few years ago, that of the present day appears little less than marvelous. The gratifying improvement can hardly be due to any change in the character or capacity of the student. In fact, as far as our observation has extended, the average of intellect or application among the students of our universities and colleges to-day is at least no higher than formerly. When, however, we turn our attention to the teacher and consider him and his method of teaching as compared with those of former years, the reasons for the magnificent progress made are more readily apparent. And contemplating this phase of the subject we are reminded that the pleasure and satisfaction resulting from a knowledge of work accomplished and results achieved, which are of the first importance to the country at large, are still the teachers' greatest reward.

TEACHERS are generally underpaid, and often unappreciated, but who can say that they have not, after all, chosen the better part? Through their energy and tireless devotion the rising generation of architects will be better prepared than the last, and the world will be benefited in consequence. It is perhaps unfortunate that teachers, who, with such painstaking care and ability, prepare successive classes of students to creditably

perform the world's work, ordinarily receive less recompense than the students themselves after being out in the world a few years, but if the compensation were larger doubtless it would attract many less worthy teachers. As it is, the calling must in great measure provide its own reward, and viewing the student work in architecture now being accomplished in this country as largely an achievement of the teachers, including lecturers, writers and demonstrators, we are persuaded that the reward in this instance is far from mean.

AT last there would seem to be some reason for the belief that the wholesale destroyers of pleasing prospects, especially the advertisers, who with their hideous billboards, posters and devices are disfiguring city and country alike, will not be permitted to continue their depreciations indefinitely. As might be expected, however, the matter of preserving unblemished the natural beauties of the country for the benefit of the public has received more serious attention abroad than here. In England an act to regulate advertisements is in force, based upon the principle that the beauty of the landscape is a national asset. Perhaps the same principle can be established in this country. It would seem to provide the means to an end most desirable. But whether we follow the plan adopted by England or not, it appears that municipal governments cannot continue to ignore the insistent demands of those who take a deep interest in the general well being. For years reformers have protested in letters to the press, in speeches before mass meetings, and have even organized to oppose the materialism that prompted the erection of monstrous advertising signs on buildings, walls and rocks the country over. Whether the promised relief comes as a result of these worthy efforts or from a realization on the part of the advertiser that a large portion of the money spent on billboard advertising has been wasted, or from both combined perhaps with a knowledge that the general public will not much longer tolerate or quietly accept unloveliness as a necessary condition of civic life, the present prospect is most gratifying and satisfactory. A city purged of the disfiguring signboard! A country of unblemished scenery! Surely no utilitarian consideration would weigh as against such a splendid accomplishment.

THE report that the Japanese Government has postponed the Tokio International Exposition until 1917 possibly lacks official verification, but judging by the quality of sense and business acumen displayed by this wonderful nation of the East during recent years, we are prepared to accept the statement as probably true. Unquestionably the exposition idea has been a trifle overworked since the World's Fair in Chicago, and it is doubtful if the acquaintance and good-fellowship between nations promoted by the more recent exhibitions has been of amount and quality sufficient to compensate for the great financial losses sustained. Possibly these losses have been due in considerable measure to the unfinished state in which the opening day has invariably found the successive fairs. At any rate, a postponement of the Japanese Exposition will not only afford time for the recovery and recuperation of a satiated fair-attending public, but it would also render the possibility of again attending a half-completed exposition gratifyingly remote.

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No. 1708.

Rational Ironwork for Store and Loft Building

By GEORGE B. FORD

IN the case of certain of the larger cities in America the photographs here shown are of no practical value. Fortunately, however, for the logical development of architectural treatment of modern materials, very few cities have required that no structural steel work shall be exposed. In France the fire hazard is so small and buildings, commercial or otherwise, are in general so nearly fireproof that the thought of protecting structural steel seems never to have been considered. It follows as an obvious result, growing out of the Frenchman's desire to be frank and free, that a specific development appears along the line of these photographs where the structural iron is handled for just what it is and not in imitation of anything else. Structural iron is in its essentials composed of plates, angles and rivets. Now is there anything in these latter that is inherently ugly? At first thought we probably say that there is. Let us be candid. We have been in the practice of covering and hiding them, on the outside with brick, stone, concrete or terra-cotta; on the inside—as far as the eye can see at least—with plaster or wood; in other words, with the materials that we were accustomed to deal with before the wholesale introduction of iron. Now, is it not to a large extent true that we have been doing this simply from a lack of inclination or lack of time to study out the possibilities of structural iron in and of itself, for admittedly it does take much

time and much hard thought to use a new material logically and consistently? Is it not further true that this very habit of covering up the structural iron has reacted—quite naturally—to make us believe that we did hide it because it was ugly? Yet, viewed fairly and squarely, is it intrinsically ugly? On the contrary, is there anything in the material itself or its structural forms that does not lend itself to a rational handling, thus a sincere handling, even attractive and thereby pleasing in its truthfulness? To view it with openness of mind we must put all prejudices aside, we must discard all conventions of practice and habit and go back in all freshness and keenness of

spirit to fundamentals; a hard thing to do, especially in the rush of practical work, but a necessary thing to do if progress is to be made.

Now let us see what are our conditions. Up to the level of the first floor the structure of the building is not visible to the public and therefore does not immediately interest us. Above the ground, in almost all types of buildings, the vertical structure consists of columns composed of plates, angles and rivets and the horizontal structure of I-beams, or channels or of plate or lattice girders. Admitted that these crude elements in all their ordered rectangularity are not beautiful, what is the minimum amount of further treatment that we may give this skeleton first to make it other than pure engineering and second to give it a real architectural inter-



DETAIL

BAZAAR DE LA RUE DE RENNES, PARIS



BAZAAR DE LA RUE DE RENNES

PARIS

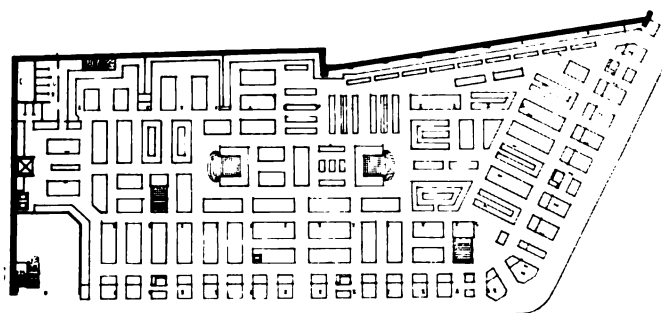
est of its own. Let us, with this in view, study two of the types of buildings to which the use of structural steel most usually applies, *e.g.* the loft building and the department store building.

Take the department store or its modification: the primary requisites are the maximum display space, the maximum circulation and the maximum light. The absolute maximum display space is obtained when the exterior and interior vertical supports are reduced to the absolute minimum for safety, with no covering and when all the space in between on all floors is used for show space. The maximum space for circulation into the building from the street and between different parts of the building is obtained when the vertical supports offer the least resistance. Likewise, in order to obtain the maximum light the whole rectangle enclosed between the exterior columns and the floor and ceiling beams on each story must offer no obstruction nor must the interior columns cast more than the minimum shadow. All this is axiomatic and self-evident, yet obvious as it is, has this idea ever been carried to the limit of its possibilities in

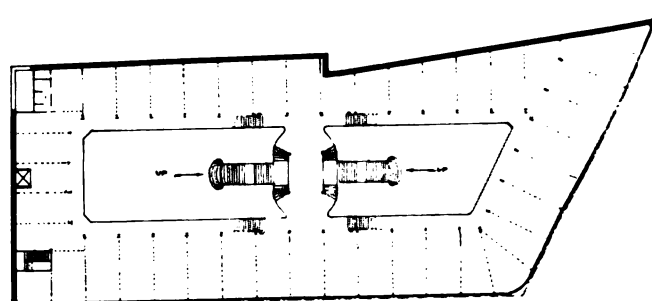
is Henri Gutton. His problem was to make the circulation into and out of and through the building as easy as possible, to make the building practically a continuation of the street. This he solves in the straightforward way of making the whole exterior street wall open, with aisles four feet wide and cases seven feet wide perpendicular to the street, forming a sort of fringe about the building. The interior is a checker-board of small display tables and shelves, so arranged as to give no main circulation but to make it necessary to pass many attractive tables before coming to the stairs. The stairs are where they will give the quickest access to all parts of the building and at the same time take up space that could not be readily used for display purposes, that is, in the middle of the great central court. The court again is large, yet as small as possible consistent with giving the

maximum of daylight to all parts of the store not served by the outside windows. Thus was the plan determined. Its details of arrangement can be seen in the accompanying sketches. The stair in the middle of the central court is all in wrought and cast iron, painted white with spots of the ornament gilded.

But to return to the exterior. Here is the ground floor, opening entirely on the street, sloping to follow the slight grade of the latter, sheltered by the continuous glass and iron marquise, shaded by the curtains which pull down at the front of the marquise. Above the marquise comes the space of the thickness of the floor and two feet above. The projection of the marquise prevents this from being of value as show space, its little height above the floor makes it of no value for introducing light into the building. Then come two public stories of solid plate glass, no space whatsoever being lost between the steel columns or at floor or ceiling. These are filled with objects visible alike from the street or from the inside, admitting at the same time the maximum light to the interior. Exterior curtain awnings, letting down



GROUND FLOOR



FIRST FLOOR

America? Let us see what an application of these principles gives us in the case which we here illustrate.

This building is known as the Bazaar de la Rue de Rennes in Paris, located just above the Rue Vaugirard on the corner of a new street and directly opposite the large, reinforced concrete art nouveau store building for the Paris provisioner, Potin. The architect of the Bazaar

from the top, take care of the summer's excess of sunlight. Then comes a work story, which must not be seen from the street, but which must be as light as possible, whence the solid filling up to a height of three feet above the floor, surmounted by an uninterrupted belt of windows to the ceiling. Then it was found that the total height required for business purposes left the building of

rather squatty appearance as compared with its neighbors, whence the addition of the light iron work above the roof. This had to be light in character to save weight and expense and to prevent the building from taking on an appearance of topheaviness.

Now, in the design of this façade, beyond the purely structural features, two considerations had to be continually borne in mind: one was the practical æsthetic idea of making the architectural treatment entirely subservient to the display of goods to the extent of making it a sort of frame to enhance them; the other was the purely æsthetic idea of relieving the crude rectangularity of the structural members by the sparing yet sufficient introduction of curved lines and somewhat free ornament. The practical working out of these considerations by the use of gently flowing lines in the narrow wood mullions and by the use of black glass with gold line branch motifs is best seen in the accompanying illustra-

tioned completing the façade. In one sense it is fortunate that this turned out as it did, for it gives us a chance to see what effect can be gained by the careful designing of the structure itself as to proportion and lines. For, after all, these are the features that count in the long run; it is the gib mass and general lines which determine whether a given design will impress itself or not on our memory as a convincing solution of the problem in hand. When we come to consider it, is not the sincerity and openmindedness that we demand in the other phases of our life equally necessary in attacking practical architectural problems?

NOTES.—The Bazaar occupies 21,840 square feet. It is 63 feet 3 inches high. It contains 1,380,000 cubic feet and cost about \$155,000, or between 12 and 13 cents per cubic foot. The cabinet work and furnishing cost \$78,000. The land cost \$300,000. Bays are 13 feet 6 inches wide.

GEORGE B. FORD.



RUE RÉAMUR

PARIS

tions. The carrying through of the lines of the façade into the cresting and the decorative manner in which the latter lends itself to advertising shows the completeness of design of the whole façade. So simple it is in its idea that it might appear the work of a tyro. But why has nothing of this sort ever been done before?

This leads us to another building of like principle, erected somewhat previously, on the Rue Reamur in Paris, by M. Georges Cheodannes, architect. This latter was designed to be used as a store on the ground floor and as an office or loft building above. The original scheme comprised considerable decoration of the façade, but when the bare shell of the street front was finished the owner could wait no longer for a return on his money invested and so filled the building with tenants before the façade could be finished. He then discovered the place was quite profitable financially and, doubting the pecuniary advantage of further ornament, he indefinitely post-

The Report of the Building Code Revision Commission of New York City

The report of the Building Code Revision Commission of New York has just been issued. The commission has made an exhaustive investigation of the causes and preventives of congestion of population in the business districts of the city. The commission has made a personal inspection of the downtown business districts which has consumed several weeks.

It is suggested that building be limited in height either on the basis of zones within the city, by a ratio of the width of the street, by a system of progressive taxation upon each story above a maximum, or by a flat limitation. The commission recommends that an elevator capacity be provided for each building that will, in a fixed time, to be specified as a limit in the code, empty the building of all tenants.

Because of the enormous numbers of persons using the streets in the lower part of the city and the proportionate increase which will be occasioned by the erection of additional high office buildings, the commission suggests that immediate steps be taken to prohibit all vehicular traffic within certain hours on all main passenger streets south of Chambers street.

During the last five years, the commission reports, offices accommodating 33,251 persons have been erected below Chambers street. These have in nearly every case been from 15 to 23 stories high. The assessed values of the sites occupied by these buildings have increased nearly 15 per cent., much greater than the increase in the value of other sites where smaller buildings have been erected.

The sanitary conditions and the conditions of light in these high buildings were specially investigated by Dr. John Hill, who found that the gloom cast by high buildings darkens not only the buildings opposite, but also the offices in the same building. Along lower Broadway all offices have to be lighted artificially, except between 9 o'clock in the morning and 3 o'clock in the afternoon, while along Exchange Place, for instance, there is direct sunlight for only two hours a day. High buildings, the report continues, raise the temperature of the streets and diminish the natural draft.

A careful analysis of the development of office buildings during the years 1903-1907 shows that, despite the

provisions of office space below Cortland street and Maiden Lane to accommodate 30,287 persons, this was only 34 per cent. of the total office accommodations for 13,937 persons, or 17.74 per cent. of the whole, were provided between Twenty-third and Forty-second streets, while the district between Forty-second and Eighty-sixth street office buildings were erected to accommodate 35,180 persons, or nearly 40 per cent. These figures indicate that the office section is drifting northward.

On the area now occupied by office buildings below Chambers street, where there are at present accommodations for 189,459 persons, and with an office level of fifteen stories, there will be room for 222,407 occupants,

an increase of 94,000, which would probably not be demanded for a period of from twelve to fifteen years. With the office level at twenty stories there will be accommodations for 285,137 occupants. In this district there has been no addition to the factory space.

The necessity for repairing substructures in the district occupied by high buildings has caused the tearing up of the streets, to the hardship of passers-by, especially in some places where 35,000 persons pass a given point in a single day. In 1907 Wall street between Broadway and South street was torn up for an aggregate of 364 days, and the same condition obtained on many other streets.—*New York Times*.

Models of Old London

Surrounded by curious old houses that stood elbow to elbow from shore to shore, with the chapel of St. Thomas of Canterbury, formerly a sort of keystone or buttress in the center, old London Bridge, for centuries the only structure on the tidal Thames, was the setting for many scenes in the drawings of Hogarth and the writings of Dickens, the artist and the writer who most successfully depicted the squalor of slum life in London. The "old bridge," which had its site on the relics of the still more ancient Roman bridge, gave way in its time to another and more modern structure, and this and others in their turn, until the present London Bridge.

The London Bridge of the seventeenth century, or during the reign of Queen Elizabeth, has been vividly depicted in a model made to a scale of eight feet to the inch by a well-known London architect.

This Elizabethan bridge, 926 feet long, was constructed on oak and elm piles driven into the bed of the river. These were protected by "sterlings" to secure them against the "scour" of the tide, says a correspondent of the *Boston Herald*. This quaint house-laden bridge stood for six centuries.

In addition to the model above referred to, this same architect has completed on the same scale representations of Old St. Paul's, begun in 1136 and finished in 1498; Old Cheapside, with the ancient market, provided with stalls removable for occasional tournaments, and the Outfall of the Fleet, which shows the edge of the Thames in Elizabeth's time.

Year by year these old landmarks are disappearing. Some succumb to the ravages of time, others are razed that the site may be used for modern structures, and unless some enduring form like those above described is made the old places will be but a memory.

This is true throughout Europe. It is also true in the comparatively recent history of this country.

It will not avail this government to store in its Congressional Library photographs and books and papers for the enlightenment of future generations—photographic processes fade, and the paper used, especially by the daily papers, made from wood pulp, will be nothing but shreds fifty years hence.

Models of our more important historic buildings should be made and lodged in a building provided for the purpose. With each succeeding quarter century these

should be added to. Photographs of main thoroughfares, made by the carbon process, should be taken, and every publication that files its copies with the Library of Congress might well be required to print at least two copies on linen paper, so that there would be available at all times a proper collection of material that would mark the progress of the country in every way.



FIG. I.—SETTEE, OR DOUBLE CHAIR

ABOUT 1725

PROPERTY OF THE METROPOLITAN MUSEUM OF ART.

English Furniture of the Eighteenth Century

BY LUKE VINCENT LOCKWOOD

SEVERAL years ago THE AMERICAN ARCHITECT published, under the title of "Seats of the Colonists," a portfolio of photographs and measured drawings of Colonial chairs and other furniture.

The recent acquisition by the Metropolitan Museum of Art of New York City, of many fine examples of eighteenth century furniture is well illustrated and described in the June Bulletin issued by the museum.



FIG. 2.—ARM CHAIR
ENGLISH EIGHTEENTH CENTURY.
PROPERTY OF THE METROPOLITAN MUSEUM OF ART.

Through the courtesy of the director, Sir C. Purdon Clarke, and Mr. Luke Vincent Lockwood we are enabled to present the interesting article and the original illustrations that accompanied it.

The pieces of furniture recently added to the collection of woodwork by the Metropolitan Museum of Art, New York City are among the most important accessions of the year, not only because of the excellence of the individual examples, but also because collectively they form the Museum's only specimens of the English cabinet makers' art of the eighteenth century, and it is hoped that they will be the nucleus for a collection of that much-needed branch of the industrial arts.

The value of such a collection can hardly be overestimated, for there is no branch of art which more clearly depicts the manners and customs of the human race, and also none, the study of which will do more toward awakening a sense of the beautiful in every day life, with its accompanying direct effect upon the individual. From a collector's standpoint, furniture occupies a unique position, for it is the only form of collecting the result of which has both the esthetic and practical value equally divided.

The evolution of style and decoration in furniture is one of the most fascinating and instructive of studies, and America is especially rich in specimens showing the various transition stages. In no other country has a style been so completely worked out as it has here, because the colonies being so far removed from the centers of fashion were not tempted to forsake an older for a newer style before it had been fully perfected, and having once acquired the style, the Colonial workmen adapting it to the needs of the people, developing it until it had reached a perfection not attained in Europe. The truth of this

statement is particularly well illustrated in the development of the high chest of drawers. In England this article of furniture was abandoned, while yet in a rather crude state, for the French commode, on the order of the modern bureau (Fig. 8), but in America it was developed, and the commode form remained comparatively scarce.

The ideal collection, therefore, for the Museum, would be a combination of English and American pieces, the former to show the models from which the colonial workmen acquired their inspiration and the latter to show the independent development of the style far away from the influences of fashion.

The specimens now chosen by the Museum are especially well adapted to these uses, and fall within two well defined groups, one showing the Dutch, and the other showing the French influence.

The dominant feature of the former school is the use of the cyma curve in outline and decoration which is carried to such an extent in some specimens of chairs that all straight lines are eliminated. The splat which characterizes eighteenth century chairs was first solid and plain, then curved, and later pierced in various designs. The decoration was carved in relief upon the surface, and occasionally applied. The designs were swags and pendants of flowers and fruits, shells, usually that of the scallop, acanthus leaves and scrolls, tassels, heads and wings of eagles, crowns, conventional figures and mascarons.

Fig. 1, here shown, is a settee, or double chair, dating about 1725, illustrating many of the characteristics above



FIG. 3.—SIDE CHAIR
ENGLISH STYLE OF CHIPPENDALE
PROPERTY OF THE METROPOLITAN MUSEUM OF ART.



FIG. 4.—STYLE OF CHIPPENDALE, GOTHIC ENGLISH, ABOUT 1760-1770.
PROPERTY OF THE METROPOLITAN MUSEUM OF ART.

enumerated. The outline of the backs is composed of cyma curves as are also the arms and their supports, the front rail is curved, and the legs are in the same curve, commonly called cabriole or bandy legs, terminating in bird's-claw and ball-feet.

The decoration is in relief carving, in shells and acanthus scrolls; the splats are pierced with oval openings, which are surrounded by two birds, their beaks meeting at the top with one wing on each side; below are cords and tassels. On the knees are carved shells and flower pendants.

Fig. 2 shows a walnut veneered arm chair of about the same date. On the top rail are carved five medallions, each containing a spray of flowers; the splat is cut away in a form suggestive of the later style and carved in relief with flowers and leaves and edged with an acanthus leaf scroll. The arms and their supports are also carved in the same leaf design. The legs are cabriole terminating in animal-claw and ball-feet.

The epoch showing French influence may be divided into two periods following the Louis XV and the Louis XVI styles.

To the former period belongs the famous Thomas Chippendale of St. Martin's Lane, London, who published his *Gentleman's and Cabinet Makers' Director* in 1754 and two successive editions during the ten years following. His success must have been immediate, because within a few years several other cabinet makers published designs so similar that it is often impossible to distinguish between them. For this reason, it is but fair to call the furniture of this fashion by Chippendale's name.

The chief characteristic of the Chippendale style up to about 1770 was the use of Rococo scrolls, dripping water effects and conventionalized leaves and flowers, intermingled often with Chinese and Gothic designs. The most striking difference between the French and English Schools was the use of the splat in chairs. The English had taken this fashion from the Dutch, as we have said, and never abandoned it; and Chippendale and his school took advantage of the additional wood surface thus provided to develop many original themes.

The almost unfailing mark of a Chippendale chair is the bowshaped back; but as in all other cases of unfailing rules, there are exceptions, and it is never safe to classify except by the triple method of form, decoration and material.

Fig. 3 illustrates a mahogany side chair in typical Chippendale style, showing a well-defined splat with Gothic feeling. The top rail is carved in acanthus leaf design, and the legs and lower edge of the splat are carved in scrolls, very characteristic of Chippendale.

Fig. 4 represents a very beautiful example of a Chippendale Gothic design dating 1760-1770; every detail is well worked out, including the frets on the stiles and legs.

Fig. 5 shows a side chair in what is known as the ribbon-back design, upon which Chippendale especially prided himself. The carving is of a high order in the French rococo fashion and the splat is composed of a bowknot with streamers intertwining and extending the entire length. The legs, which are cabriole, terminate in French scroll feet.

Fig. 6 shows a mahogany arm chair in late Sheraton style, which is commonly known as the Empire, dating about 1800. The chair is a perfect specimen of the style,



FIG. 5.—RIBBON-BACK CHAIR . . . ENGLISH STYLE OF CHIPPENDALE
PROPERTY OF THE METROPOLITAN MUSEUM OF ART.



FIG. 7—CORNER CUPBOARD ENGLISH, ABOUT 1760-1770
PROPERTY OF THE METROPOLITAN MUSEUM OF ART.

with details fully worked out. The supports for the arms are swans raised on cornucopias, below which is carved the classic honeysuckle pattern. The legs are cabriole in the Egyptian fashion, ending in griffin's feet.

In Fig. 7 is illustrated a mahogany corner cupboard in Chippendale style of about 1760-1770.

Fig. 8 shows a mahogany commode in Chippendale



FIG. 6—CHAIR, STYLE OF SHERATON, EMPIRE ENGLISH, ABOUT 1800
PROPERTY OF THE METROPOLITAN MUSEUM OF ART.

style, which copies very closely the French pieces of the same period. One of the most interesting features of this piece are the handles or wooden knobs carved in the French rococo style with cartouches surrounding them.



FIG. 8.—COMMUNE STYLE OF CHIPPENDALE, ENGLISH
PROPERTY OF THE METROPOLITAN MUSEUM OF ART.

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Technical articles by unqualified writers.

More accurate classification of fact and fiction needed.

Art in America benefited by an enlightened commercialism.

ILLUSTRATIONS:

Work at Woodmere, L. I., N. Y., by Charles Barton
Keen, Architect. 8 pages.

ADDITIONAL:

A stairway, Barcelona, Spain.

Stairway, Biblioteca Medicea, Florence, Italy.

IT is told of a certain noted character in literature that when in early life he found himself embarrassed by lack of funds he set to work and produced a book of travels describing in detail foreign lands. Later the proceeds derived from the sale of his work enabled him to travel through the country he had essayed to portray and he was much gratified to learn that his descriptions had in many instances varied little from the actual truth. Only the most casual perusal of current literature is necessary to convince the enlightened reader that the art displayed by this early writer in reviving his failing fortunes is in no sense a lost art in modern times. Nor is the practice of it confined to the comparatively harmless fraud of describing imaginary travels. Instances are much more plentiful than praiseworthy in which writers have launched boldly into what they have evidently disposed of for scientific or technical articles on subjects about which their absolute ignorance is painfully apparent. In other words they have not yet traveled through the country they attempt to describe, and, moreover, they are not ordinarily as fortunate in divining the facts and conditions existing as was their more celebrated prototype. The mass of misinformation that thus finds its way into print is really astonishing.

A RECENT case has been called to our attention in which the writer was very apparently describing untraveled countries, even dispensing with the aid of a map. In an article devoted to the construction of the Cathedral of St. John the Divine, published in one of the most conservative New York dailies, we are solemnly assured that "stone fits into stone and each brick or piece of stucco is intended to have a certain effect in supporting the entire mass. In this sense, the theory of the cantilever is employed." While this remarkable statement will no doubt come as a surprise to many architects and engineers who had entertained a somewhat different notion concerning the theory of the cantilever, it will prepare them to hear that "in constructing cathedrals no steel is used" and that "like the living rock they are formed slowly, as by nature, cohesive and closely knit." This writer speaks very feelingly of the layman whose lack of technical knowledge and understanding leads into impatience at the seeming waste of time in the construction of this huge fane, and his sympathetic tolerance of such unreasonable ignorance is really quite fine.

TO those who know, of course, an article of this character is more amusing than otherwise, yet it undoubtedly tends to lower the value which they place on published articles in general, that purport to be informing and to some extent technical. Anyone who reads a ridiculously superficial, and in some cases grossly inaccurate, article on a subject with which he is himself familiar, can scarcely escape the reflection that possibly the expressions and statements concerning subjects upon which he is not so well informed are as unreliable. As a consequence doubtless many special articles contributed to the daily and popular press are viewed with undeserved suspicion. It would seem that much good would result if it were possible for editors and publishers to ascertain beyond question a writer's absolute knowledge of his subject before accepting technical articles upon it. But while to carry the matter to such a point is obviously impracticable, under present conditions, any measures that will tend to a more accurate classification between fact and fiction will be of undoubted benefit to the cause of general education.

WHILE the amount of money expended annually in America in the cause of art is still pitifully small in comparison with the amount put to similar use in many of the countries of Europe, there can be no question but that it has increased greatly in recent years. Where formerly no attention was bestowed upon æsthetic considerations in connection with commercial or other purely utilitarian structures, we now find attempts on almost every hand to render them in some degree pleasing to the eye. The results have not been invariably successful, but the apparent acknowledgment that something more than meeting the bare demands of utility is desirable, appears as a most hopeful indication of the future. Commercialism has long been considered a foe to art, and, probably, its most formidable adversary. If the forces now active should result eventually in an enlightened and educated commercialism, which perhaps is not an entirely visionary hope, with art as its ally, our works and cities would not only soon equal but quickly excel those in any country of the old world.

THE AMERICAN ARCHITECT AND BUILDING NEWS

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No. 1709.



A SCHEME FOR THE IMPROVEMENT OF THE NATIONAL GALLERY AND TRAFALGAR SQUARE

RICHARDSON AND GILL, ARCHITECTS

Notes from Europe

BY FRANCIS S. SWALES, ARCHITECT, LONDON

FOR some months the London daily press has contained articles dealing with the overbuilding of residence districts in and near London County. One paper furnished statistics showing that there were at the time twenty thousand empty houses in London: during the past two or three months several hundreds more have been completed, but many of these are occupied and more are being constantly demanded. I have been to several districts where empty houses are most numerous and have seen the houses and made a number of inquiries to determine if possible the cause of so many remaining vacant. There appear to be three leading reasons why these houses remain unlet, viz.:

1. Houses with living rooms in the basement or cellar in an unsanitary condition and undesirable neighborhoods.

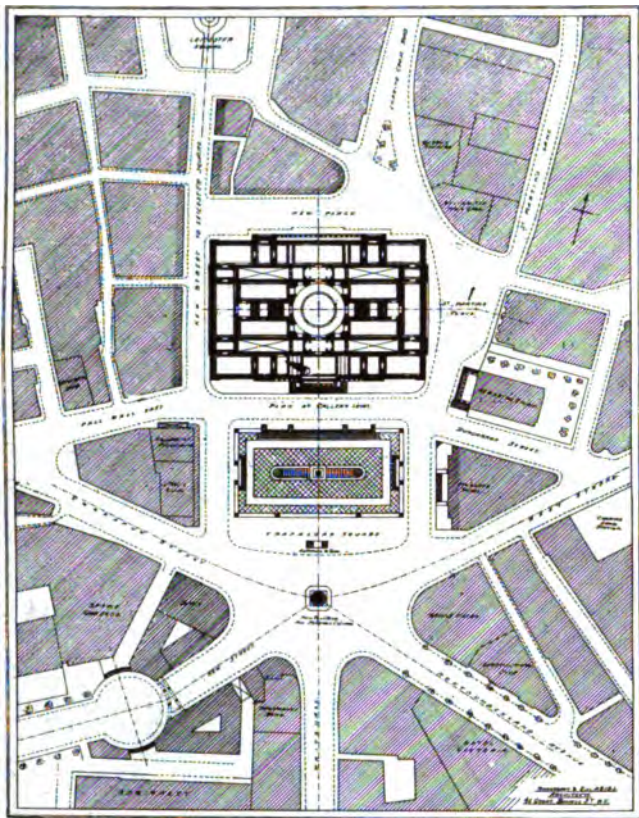
2. Houses which are otherwise badly planned, are ugly, without sufficient garden spaces, excessively taxed and to let under impossible conditions.

3. Houses which are vacant, due to decline of the vicinity in which they are located.

By far the greatest number vacant are those of the three or four-storied "Sandwich" type of city house built in the first place by speculative builders and "made to sell." In order to show on paper the maximum ac-

commodation, the basement, which is either wholly or partly below ground, was divided into rooms: here are the kitchen, scullery and sometimes the bedrooms of the maids; a stairway, in some cases without direct lighting and often both narrow and steep, leads into the entrance hall (the only one), off which open the cellular dining-room, drawing-room, etc., each with but a single door leading into it or out of it and with no intercommunication between the various rooms. Generally the tops of the windows are about two feet below the ceiling—a single stairway is the only communication to the floors above and also the only means of ventilation to the rooms below. One bathroom accommodates as many as a dozen sleeping rooms and is provided in most cases with a rusty iron bath tub. A dark passageway furnishes access to the bedrooms which lack the convenience of closets, or "cupboards," as they are called in England. One half of these rooms overlook a narrow street lined with rows of that type of house which the word "Victorian" so amply and unhappily suggests; the other half looks upon what the advertisements describe as a "garden"—in fact, a dingy little back yard bounded by high yellow brick walls.

Besides crossing the Atlantic I have sailed around Lakes Erie and Ontario in a small yacht and have crossed



PLAN: SCHEME FOR THE IMPROVEMENT OF THE NATIONAL GALLERY AND TRAFALGAR SQUARE

the Channel and North Sea, in all sorts of craft, some two hundred and more times, and have never known the sensation of seasickness, but I imagine it must be something like the illness which comes upon me after visits to two or three of these empty houses. The unfit-to-be-inhabited condition of the above class accounts for perhaps half of the empties. Fully two-thirds of the remaining half can be accounted for by similar bad planning. Even when the kitchen and scullery are at the ground level and the sanitary condition is better, the consequent unpleasantness of the houses arises from the fact that most of them were built without the assistance of a competent architect. Now that they are placed in competition with the suburban districts, due to the growth of the "Underground" and other rapid transit facilities, their owners are confronted with some difficult problems. Any change in the structure must be made in conformity with the building regulations of the London County Council, which have been created since these houses were built, and to comply with these sometimes

means an expense which would equal the cost of a new building, or at least that of one of the new "jerry-built" but cleaner and more cheerful structures in the suburbs. The latter have the advantage of a "garden" with a few shrubs and *some*, even though a very little, grass plot. There is also to be reckoned the competition with the "Flat" or Apartment Building which relieves the tenant from a portion of the stress of the iniquitous system of direct taxation which burdens the life of Britain's unfortunate "middle-class," especially that portion of this class which is obliged to "keep up appearances"—small professional men, managers of struggling business concerns, responsible clerks, etc. The rental of the flat usually includes "rates and taxes," but with the houses these rates, in London, exclusive of water, gas and electricity, amount to as much as one-third of the rentals. In some cases there is also a ground rent to pay to the freeholder, and, in many places, where the houses are in a state of dilapidation, or only "done up" to deceive the prospective tenant as to their real condition, the owners insist upon a three years or seven years repairing lease, which compels the tenant to put the house in repair when leaving it. After such a house has been let the District Surveyor may discover the necessity of some serious alteration to render the structure safe or sanitary and the burden of the expense falls upon the tenant. If the remaining three or four thousand empty houses be not accounted for by either or any of the above causes, a considerable number will be found to be unoccupied because of the excessive rentals. The encroachment of shopping districts upon such neighborhoods as Kensington, accompanied by the building of churches and "public houses"—as the English call their saloons, and a degenerate type of bar-room most of them are—has caused a perceptible decline in their desirability as places of residence, but a corresponding decrease in the rents has not as yet been produced.

The above are probably the principal reasons to account for "London's 20,000 empty houses," but, of course, there are others. The *Daily Mail*, however, points particularly to the wholesale erection of small houses in the semi-suburban districts by speculative builders. Bad in design as indeed most of these are, they are surely a relief to the congested districts where the poor and comparatively poor have been so long housed in buildings which are too old or too unsanitary for human habitation. It is evidently true that these new neighborhoods mentioned by the *Mail* will be the slums of the future, but the problem of dealing with them does not appear as great as that of rendering habitable the structures which are being vacated.



ELEVATION

DESIGN FOR PUBLIC BATHS

M. DROUET, ARCHITECT



SECTION

DESIGN FOR PUBLIC BATHS

M. DROUET, ARCHITECT

The objection that London is undoubtedly "overbuilt"—and the question bids fair to become a serious one in the immediate future for investors—are not very apparent and certainly not real. London is far from being crowded with well-planned, lighted and ventilated buildings, notwithstanding the beneficent effects of the Building Acts of the London County Council which have tended to great improvement along these lines. There is a dearth of what an American would consider moderately good office buildings. Manufactures, printing and other industries are carried on in crowded, low-ceilinged old houses which should have been long ago marked for destruction, while it is mostly the building which has outlived its original usefulness that derives any benefit from the law of "Ancient Lights"—the planning of a new building is often seriously affected and complicated by the evil influence of this law. Sometimes, too, the well-meant acts of the London County Council effect the same unfortunate results. Perhaps when another 20,000 houses have been vacated it will be possible to have a few good buildings for business purposes. It may be possible to obtain land at a price which will not include besides its actual commercial value the original cost of some ancient structure plus the sentimental historical value attached to the visit of a long-departed dignitary and plus the blackmail which is extorted by the various neighbors privileged with "Ancient Lights" from every concern which dares to embark upon the enterprise of building on any given site a building which varies in its form or dimensions from the one which preceded it.

Meantime, manufacturers are moving out of London. The "Garden City" idea has taken root and is flourish-



GROUND PLAN

PUBLIC BATHS



PERSPECTIVE VIEWS



PUBLIC BATHS



M. DROUET, ARCHITECT

ing. Bourneville and Port Sunlight have proven to be—like Detroit—places “where life is worth living,” and manufacturers are finding that it pays better to operate where daylight is not charged for, where the ceilings of manufacturing rooms may be more than nine feet high without mixing up with local regulations which limit the total height of their buildings, and inflated land values which prohibit horizontal extension.

Letchworth, where several large manufacturers have located, is developing remarkably, and a four-hundred acre estate at Fallings Park Garden Suburb, near Wolverhampton, is being laid out on similar lines by Sir Richard Paget, and here, also, large industries are being established bringing with them their hosts of employees and providing homes designed by the best of house-architects.

It is interesting to compare the land values, for these show what has brought about the present exodus from London. Land at Letchworth is leased upon ninety-nine years agreement for as little as \$75 per acre, annual rental, while for the same area the yearly rental in some manufacturing districts in London runs to as much as \$15,000. Gas, water and electricity can be obtained cheaper in these country places than in London where antiquated and unchangeable systems of production continue to exist. Cheap water, and the right to provide water-closet cisterns with a supply sufficient to flush the closet, will be one of the greatest boons.

Were it not for the extreme conservatism of English manufacturers it is probable that the idea of the “Garden City”—as it is called—would have taken hold long ago. However, now that the movement away from London has begun nothing can stop it, and American manufacturers who will be, under the new Patents Act, obliged to either lose their patent rights in this country or come to Britain to do their manufacturing will doubtless be among the first to recognize the advantages offered by the “Garden Cities.”



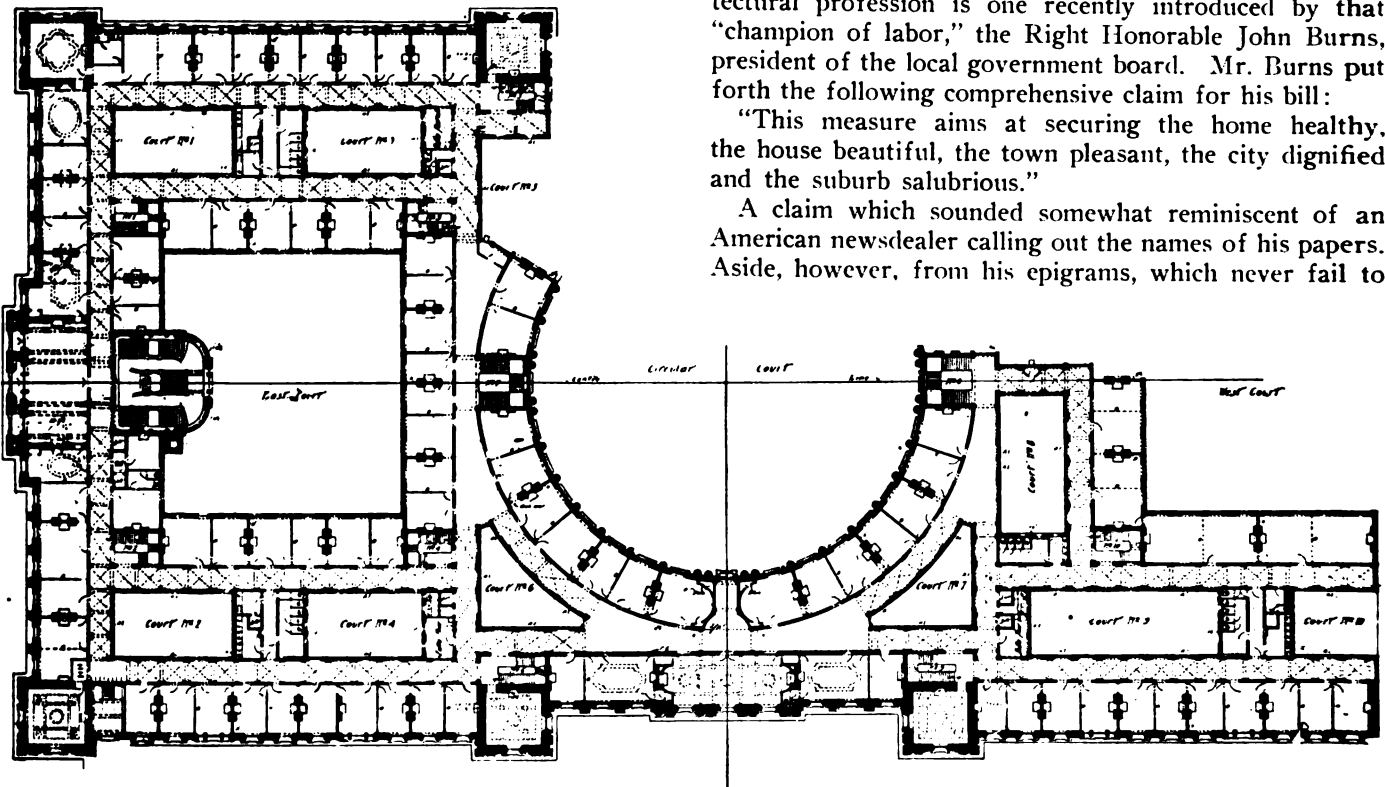
COMPLETED PART OF NEW GOVERNMENT OFFICES, WESTMINSTER, LONDON. J. M. BRYDON, ARCHITECT. COMPLETED UNDER THE DIRECTION OF SIR HENRY TANNER, ARCHITECT.

This patent act, by the way, is, according to all accounts, destined to deprive of their English rights all foreign patentees who have not ample means at their disposal, while those doing extensive business in England will be compelled to go to the expense of putting up large plants in this country in order to protect their inventions from appropriation to themselves by British manufacturers. The act may do some good to architects and engineers temporarily and possibly to English workmen permanently. If it does the latter, it will also set back the export trade of the United States and Germany, which are the countries most affected, but, will it not be met with retaliatory action from both? It is said, however, that up to the present \$125,000,000 of foreign capital has been invested in England as the result of the Act.

Another act which has points of interest to the architectural profession is one recently introduced by that “champion of labor,” the Right Honorable John Burns, president of the local government board. Mr. Burns put forth the following comprehensive claim for his bill:

“This measure aims at securing the home healthy, the house beautiful, the town pleasant, the city dignified and the suburb salubrious.”

A claim which sounded somewhat reminiscent of an American newsdealer calling out the names of his papers. Aside, however, from his epigrams, which never fail to



PLAN: COMPLETED PORTION

NEW GOVERNMENT OFFICES, WESTMINSTER



CIRCULAR COURT, NEW GOVERNMENT OFFICES, WESTMINSTER, LONDON

call forth a good deal of noise in the House of Commons, the bill is of considerable interest.

The salient features of the measure are as follows:

It aims to abolish slums and provide for the proper planning of new districts, as these become necessary in connection with the existing plans of towns and cities.

It enables urban and rural district councils to build new cottages and houses without seeking the consent of the county council or other superior authority.

It gives power to acquire land compulsorily for housing purposes without invoking the assistance of Parliament.

It provides for a single arbitrator to settle compensation and no additional allowance for compulsory purchase, as in the Small Holdings Act.

Public Works Loan Commissioners are to be empowered to lend money for housing purposes at the minimum rate allowed by the treasury.

Every council is to appoint a medical officer of health with full powers over housing and inspection.

It is doubtful whether any bill will or can provide for all that Mr. Burns hopes to accomplish. Doubtless he has in mind the creation of Bedford Parks, Hampsteads and Port Sunlights all over the country. That is what every architect desires as well. But Bedford Park owes its beauty to the fact that all of the houses, the shops, the church, the club and the "Pub" were designed by two of the best architects England has produced in many years—Messrs. W. Eden Nesfield and R. Norman Shaw. To the latter is due much of the architectural beauty of Hampstead, though many of the new houses are the work of Mr. C. H. B. Quennell. It is the same case in all of the "Garden Cities," their beauty is due to the architect who planned them and his co-workers who have designed the individual buildings, for, no matter how carefully a law may be framed to provide for beauty, this will not be the result unless there is the perception and intelligence found to create it. Most laws of this kind produce the result of effecting a higher standard of work on the part of the lower orders of intelligence, but they hamper and restrict the artist and have a tendency to lower the level of his work.

I doubt, for instance, that, except by requiring more land to be given up to each house, Mr. Burns' measure could improve such a scheme as the latest Garden City—

the Hampstead Garden Suburb planned by Parker & Unwin and E. L. Lutyens, architects. Is it probable that a government official could suggest much to improve such a layout? Could it provide for better plans than some of those by M. H. Baillie Scott or better exteriors than those by Michael Bunney and by E. Guy Dawber? What might achieve some of the ends sought by Mr. Burns' bill would be the creation of a Ministry of Fine Arts, which would include a Department of Architecture controlled by a committee of men who are the leaders of their profession and competent to deal with each new case of extension on its own merits.

A portion of the new government offices in Westminster has been completed—about two-thirds of the whole as planned by the late Mr. Brydon, whose preliminary design was published in the *AMERICAN ARCHITECT* for June 17, 1899. The plan consists of a row of offices ranged round a central, circular court, and two square courts at the right and left above and below which are four small courts whose only excuse for existence seems to be the attainment of the square form to the larger court. Clearly as much office space and better lighting to the corridors and toilet block could have been attained without them. The circular court, too, is another feature which has brought about a great waste of floor space, created four more small courts, and consequently thrown away money most foolishly upon expensive external walls and finishing around unhealthy internal courts. The plan is certainly not a good or monumental one but it serves the purpose of showing a type which is greatly admired by many English architects of to-day and seems to have provided a number of the competitors for the London County Hall with half their ammunition, several having adopted these absurd little light areas. The exterior is in many respects one of the most successful of recent public buildings in Great Britain. Unfortunately the principal belt course splits it very nearly in halves horizontally and an attic in rusticated courses rises unpleasantly high above the pediment. It would have been much better if all the work above the balustrade surmounting the cornice had been omitted, the corner towers at least are needlessly offensive.

An interesting bridge has been built between the new offices and the Home Office elaborately ornamented with sculptures, the work of Paul Montford and W. S. Frith,

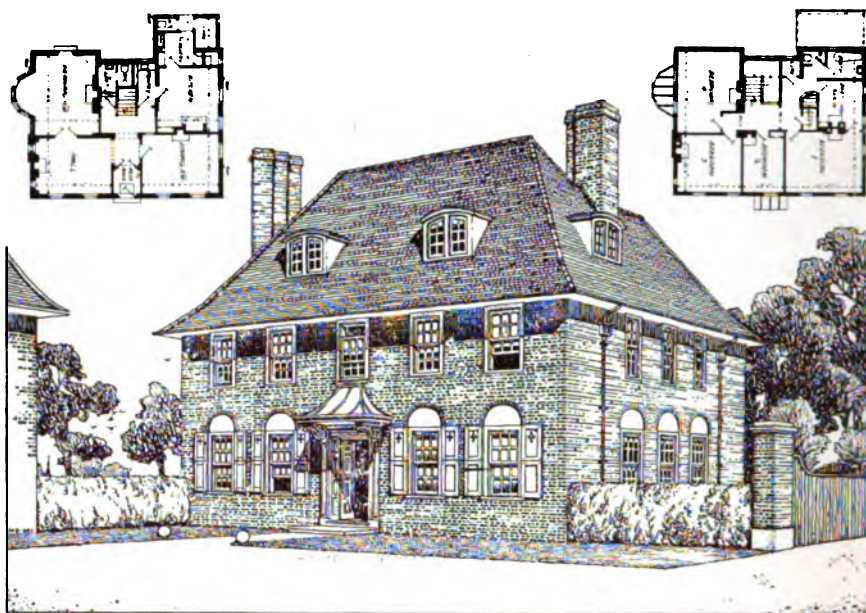


BRIDGE BETWEEN NEW PUBLIC OFFICES AND THE HOME OFFICE

which, with the dignified Loggia, between Charles Street and the Circular Court, as well as a fine Entrance Hall, adds considerably to the monumental effect of the whole. The circular court, if otherwise inexcusable, is at least effective as far as it goes. The cornice treatment over the ground story and the way in which the windows above come upon it, also the design of these windows themselves, leave much room for improvement; but the well-detailed order and the absence of overloaded, eccentric features give it a certain stateliness and air of worth not commonly found in the recent public work in Great Britain.

The interiors, generally, are less successful; they are not, in such rooms as the Audience Chamber of the Local Government Board and the Board Room of the Board of Education, anything above the average over-elaborated designs to be found here and there throughout London and "the provinces."

The August number of the *Architectural Review* contains an unusually interesting study, by Messrs. Richardson & Gill, for an improvement in a detail of the plan of London. It is nothing less than a suggestion for the cleaning out of Trafalgar Square and a doing over of the front of the National Gallery—a much-to-be-approved idea. It appears to involve the moving of the colossal columnar monument to Nelson into the middle of a space where five roads meet, the omission of the base to the said monument and the removal of Landseer's fat and woolly bronze lions from their present resting place to points at the ends and along a very wide flight of steps which is to form an improved approach to the National Gallery. The Gallery itself is to be swept clean of its row of superimposed "pepper-boxes," and a dignified, if somewhat dry, attic-story and flat-topped, circular skylight are to be substituted. The plan is to be much enlarged and perhaps improved. Two new streets are to be made; a rather insignificant obelisk is to be erected in the center of the square, all of the unfashionably-garbed and unhappy-looking gentlemen who now stand on high, uncomfortable pedestals are to be removed from the site while the underground station is to be shifted to a position on axis with the monument, obelisk and



DETACHED HOUSE
NEAR THE HEATH EXTENSION

MICHAEL BUNNY AND
C. C. MAKINS, ARCHITECTS

National Gallery from a position at one corner which it occupies at present. It is a fine scheme, but except so far as some possible improvements in the National Gallery are suggested is both improbable and impracticable.

Such projects are annually called forth by the *Chenavard* prize at the *Ecole des Beaux-Arts* in Paris. Usually more extensive than possible for actual execution, they seldom fail in those qualities which interest us in all large plans, such as grasp of the advantages of a given site and the possibility of joining up with the town, or neighborhood, in which it is situated, the monumental effectiveness of planning or well composed elevations. Sometimes they only serve to show what might have been, while at others, what might really be is suggested. Perhaps some future "Paris Exposition" may yet leave behind such a building as the Popular Baths designed by M. Drouet, which this year achieved for him the important 1st Prix Chenavard.

M. le Duc Loubat has placed at the disposition of the Academie des Inscriptions et Belles-Lettres the sum of 5,000 francs for the purpose of inducing M. Bigot to continue his remarkable studies upon the topography of Ancient Rome. The gift has been accepted.

About the time my last letter was despatched there was held at the Ecole des Beaux-Arts an exhibition of the work of the *pensionnaires* at the Villa Medici in Rome, of painting, sculpture, engraving and architecture. I mentioned the fine set of drawings by M. Hulot of his restoration of Selinus which were being shown in London. In Paris at about the same time were being shown the above works which included the final *envois* of Mr. Prost, who was the next architect to gain the Prix de Rome after M. Hulot. As Hulot is one of the most brilliant of recent holders of this great prize, so is M. Prost one of the most serious and thorough. Like M. Hulot he proves himself an able colorist and contributes a number of fine water-color sketches as an accompaniment to his great work, which is a marvelous restoration of Santa Sofia at Constantinople. M. Joussely sends plans of the Capitol at Rome, and M. Hebrard some fine drawings of the Palace of Diocletian



GROUP OF HOUSES

E. GUY DAWBER, F.R.I.B.A., ARCHITECT

at Spalato, while M. Lefevre contributes ceilings of the Palais Ducale at Mantua.

Mr. Ralph Knott's revised plans for the London County Council Hall have been finally approved by that body. The "Hall," which is an office building about as large as the United States Capitol, is to cost, roughly, \$4,000,000.

Home of the Late Augustus Saint Gaudens

A correspondent, in a recent issue of the Springfield, Mass., *Republican*, describing a visit to the home of the late Augustus Saint-Gaudens, in the little town of Cornish, in the New Hampshire hills, writes entertainingly as follows:

"High up on the hillside above the river sits Aspet, the home of Saint-Gaudens, in the center of big, rolling lawns, its white colonnade standing out from the darker background, even though half-hidden by climbing vines. A high hedge shuts off all but fleeting glimpses of the last home of America's greatest sculptor and but little idea of the two studios can be obtained from the road. Mrs. Saint-Gaudens, who has a number of girlhood friends in this city, lives at Aspet with her son Homer and his wife, and they, and some of the artist's assistants, are carrying out the work left undone when death claimed the great man.

"In the rear of the house is the studio and workshop of Saint-Gaudens, a building of much height and strange architecture, but decidedly attractive. To its right is the lawn where the great Sherman statue rested for several years, the wonder of the Cornish countryside and the delight of the colony. But in the studio itself is a statue which bids fair to be yet more famous. It is a wonderful piece of art, a heroic figure of Phillips Brooks. It is still in the clay, huge, inspiring, soothing and awe-compelling. You take your hat off when you look at it and you do not want to talk. It is intended for Boston and may be placed in front of Trinity church. If it is, many art-lovers will go to Boston.

"Saint-Gaudens worked long over the detail of this memorial, casting aside more than usual, molding and sketching with much pains. Like so many of his other works, it stands in an architectural canopy, but this does not make much impression, so perfect is its detail and so in keeping with the major subject. The bishop stands with right hand raised in emphasis, as if a point had been made and a subject closed. The left hand rests upon the Bible on a lectern and the flowing gown swings free from the shoulders as if from energy of motion. The wonderful face of Dr. Brooks looks down on you earnestly and quietly and it is the face of the man at the acme of his strength. A little to the left, and to the rear, is the veiled Christ, so modeled as to appear almost in a shadow. One hand rests on the shoulder of the bishop as if urging him onward. To the right rises the cross. It is a marvelous piece of sculpture and should create a sensation when cast and put in place. The treatment is daring in the extreme, but the success achieved warrants it. The Christ was a problem to the sculptor, one which caused him much worry, and the head was one of the last things his hands touched.

"Eight more unfinished statues are in another room, caryatids for the porticos of the Albright art gallery at Buffalo, studied from the Erechtheum at Athens. Even more interesting from the personal standpoint is the

smaller studio, the spot where Saint-Gaudens went to be alone and to work in quiet. It is a beautiful little building with a tiny sunken garden and pool before it. The interior is a museum of the best in American sculpture, for it contains much of the work of the master. On all sides are the famous bas-reliefs, the Stevenson, the infant Saint-Gaudens, the Gray Lady, the reliefs of the famous coins which were so artistically ruined by the government, and countless other things of priceless value."

Gateway to the Estate of Albert K. Smiley, Esq., at Lake Mohonk, N. Y.

The testimonial gateway to the estate of Albert K. Smiley, Esq., at Lake Mohonk, N. Y., was designed by Messrs. James E. Ware & Sons, architects, and is somewhat unique in its inception and erection. The bronze tablet over the entrance arch bears the following inscription explaining briefly the object of this work:

ERECTED BY THEIR GUESTS
TO COMMEMORATE
THE FIFTIETH ANNIVERSARY
OF THE WEDDING OF
ALBERT KEITH SMILEY

AND
ELIZA PHELPS SMILEY
THE FOUNDERS OF MOHONK
1857—JULY 8TH—1907

"QUAERE MONUMENTUM CIRCUMSPICE"

This gate stands about a mile from the village of New Paltz.

The stone used is known as "Shawangunk Grit," and was taken from a nearby quarry on the estate.

The entire structure is fireproof. The floors, partitions, stairs and roof enclosure are constructed of reinforced concrete. The roof is covered with Spanish tiles.

Southern Court Decisions

Sub-Contractor Not Bound by Lien Agreement Without Notice.—Kirby's Dig., Sec. 4970, gives a lien to every person performing any work or furnishing material for any building, under or by virtue of any contract with the owner or proprietor thereof or his agent, contractor or sub-contractor. The only limitation found in the statute is by section 4975, which provides that no person shall be given a lien for any greater amount in the aggregate than that contracted for between the employer and contractor. Held, that a stipulation by the principal contractor that no liens for labor or material shall be filed against the building is not binding on a sub-contractor unless he has actual notice thereof. *Cost vs. Newport Builders' Supply & Hdw. Co.*, Supreme Court of Arkansas, 108 Southwestern 509.

Contractor's Order on Owner.—An order drawn by a contractor on the owner of a building in favor of a materialman is an equitable assignment of so much of the fund on hand due the contractor on the contract as it was given for. *Foley vs. Houston Co-op. & Mfg. Co.*, Court of Civil Appeals of Texas. 106 Southwestern 160.

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Significant change in final examination, R. I. B. A.—Need of control and direction of street architecture.

ILLUSTRATIONS:

Two Houses at Woodmere, L. I., N. Y. Mr. Ernest Flagg, Architect. (3 pages).—Two Houses at Woodmere, L. I., N. Y. Messrs. Rossiter and Wright, Architects. (4 pages).—Testimonial Gateway and Plan of Entrance at Lake Mohawk, N. Y. Messrs. James E. Ware & Sons, Architects.

ADDITIONAL:

Stairway, Bavarian Industrial Museum, Nuremberg, Germany.—Stairway, Church of Saint Etienne-Du-Mont, Paris.

OF more than ordinary significance is the introduction of the subject designated as "The Principles of Architecture" into the final examination of the R. I. B. A. Apparently there exists some feeling abroad, as there undoubtedly does in the United States, that too little consideration is being given to the recognized principles that have broadly governed wherever architecture has flourished in the past. Unquestionably there have been numerous lamentable tendencies manifested in architecture during recent years, all calculated in some degree to confuse essentials and non-essentials or even to emasculate the art, and it is well to again hark back to precedent and tradition, involving first principles. Perhaps one of the gravest dangers to which modern architecture is exposed can be said to exist in the movement toward independent or original design. Possibly, however, the danger is not to be found so much in this fact as in the seemingly illogical conclusion ordinarily deduced therefrom that originality is stimulated and genius more unfettered if kept in ignorance of tradition. Nothing is more commendable than an effort toward originality and improvement, but it would seem that the first step in the direction of improvement is to know, appreciate and sympathise with what has gone before. In order to understand and appreciate, the principles upon which Art is founded must be known, and, being known, they can more surely be departed from if considered inadequate by the advocate of modernity. It is entirely aside that those who have discarded precedent and thrown tradition to the winds, have so far hardly

succeeded in justifying their abandonment of recognized principles. Any new departure in Art would necessarily be of slow growth, and possibly the moderns have not yet been allowed sufficient time to perfect their conceptions; but in any event originality in design or the development of a style can scarcely be considered spontaneous, and only by the most careful and painstaking study and consideration of all that has been produced, rather than by an ignorant disregard of it, can there be much hope of true progress. Then there is the tendency to give undue or premature consideration to details, magnifying their importance and in effect making them the dominant factors in the design, around which the really essential matters of proportion, mass and general arrangement are made to revolve. These and other more or less common perversions in practice lead to the belief that to insist on a thorough knowledge of "The Principles of Architecture" as a prerequisite to membership in the R. I. B. A. will result in a gradual but inevitable improvement in English architecture.

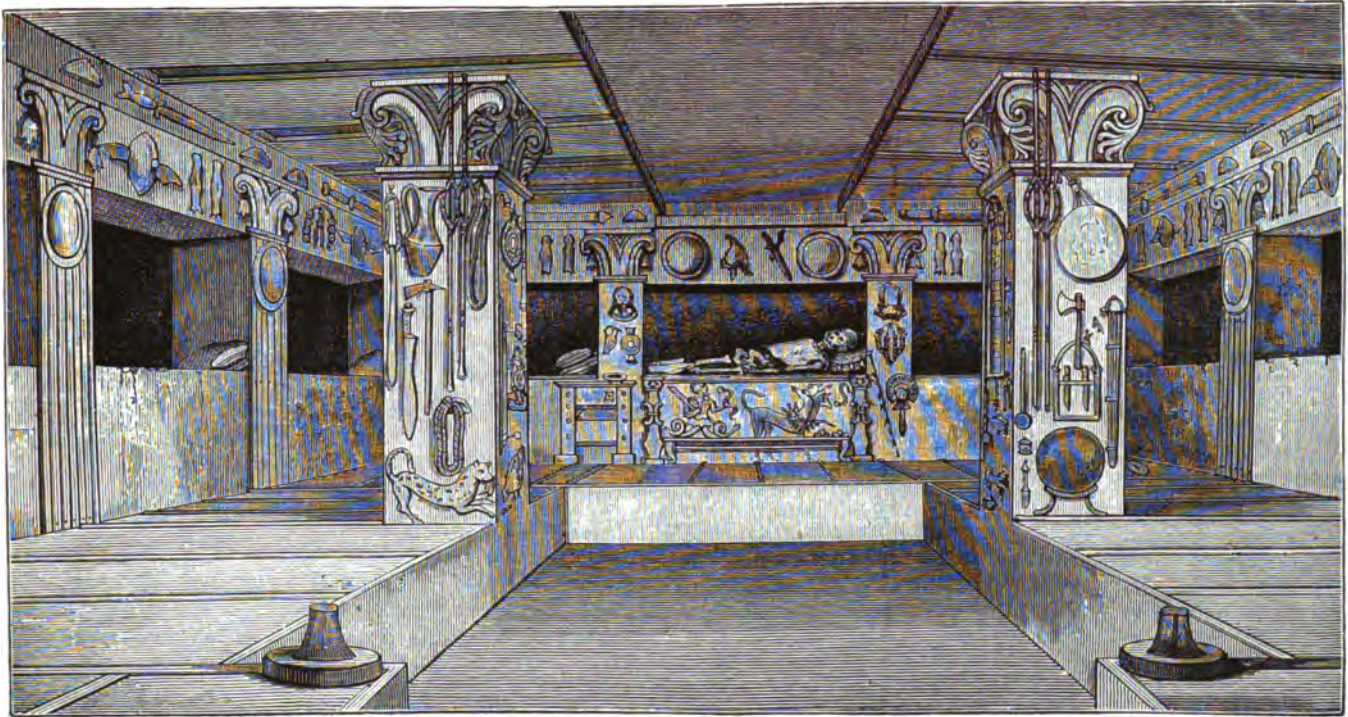
TO the average person who has given the subject thoughtful consideration the eventual control and direction of building in the larger cities of this country, not only as it concerns public health and safety, but also in the matter of external appearance, appears well nigh inevitable. Our street architecture has long been the subject of much unfavorable, and in many instances unquestionably deserved, criticism by artists and others, but the precise method by which it could be controlled and improved is at least debatable. Professor Frederick M. Padelford, of the University of Washington, in an address recently delivered before the Washington State Chapter A. I. A., advocated the appointment of a City Architect as an integral part of the municipal government of every city. The powers of the office would necessarily be broad and all plans for proposed buildings would require the approval of the City Architect. A standard of excellence in design would be established and maintained by vetoing all unworthy plans. While we can see many practical objections to the successful operation of Professor Padelford's plan, there can be no question whatever concerning the value and importance of the ends sought. We believe he correctly states that "the architecture of a city is a matter of supreme moment to its welfare. If the architecture is ugly it is impossible to keep the populace sensitive to beauty. It degrades and vitiates the esthetic sense and tends to deaden the nobler spiritual emotions that attend it. If, on the other hand, the architecture is uniformly good, it tones the whole community life." The extent to which architecture interests even the uneducated would appear incredible were it not so plainly apparent, and where there is intense interest influence must of necessity be exerted. Probably no other art is of such universal interest, and consequently of such wide influence, and for this reason its character is of the gravest concern. A full realization of this fact should arouse public-spirited men to a sense of their opportunities which would seem to lie directly in line with a fuller performance of their duties as citizens. If, combined with the movement for civic betterments now well under way in this country, a plan could be devised whereby building in general would be controlled and all designs required not only to possess some architectural merit in themselves, but to bear some relation to and conformity with adjacent structures, both in mass and treatment, the result would be more beautiful cities and a correspondingly happier people.

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ETRUSCAN ARCHITECTURE. ROCKHEWN TOMB OF A PRINCELY FAMILY

AT CERVETRI, ITALY

The four pillars and couches, the shields, battle axes, etc., carved in relief on walls and piers are similar to the interior of a chief's hall in Ireland and other parts of West Europe as described by Irish bards in extant Gaelic literature.

Primitive Homes

BY CHARLES DE KAY

THOUGH homes in trees are not exactly unknown in Europe, one cannot imagine any climate north of the Mediterranean mild enough to permit of human beings passing the winter in such elevated spheres. Tribes of Southeastern Asia, however, and of South America have been discovered who reside permanently in cabins reared on platforms constructed among the treetops. In the Northern lands it could only be a hermit or a solitary fugitive from the rest of mankind who would revert to an arboreal life. The earliest homes in such latitudes of which we have any evidence imitate the hibernating animals by seeking cover in the earth. Cave dwellers still exist here and there in France and travelers through the high plateaus of Asia tell us of extensive ranges of dwellings excavated in cliffs which have been inhabited during comparatively recent times by immigrants from Western China.

So far as we can see through the mists of the ages before Rome opened up the book of Northern Europe, that land, with its larger and more accessible islands, was once sparsely occupied by tribes akin to the inhabitants of Siberia and central northern Asia, who lived on wild beasts, birds and fish, domesticated and ate the dog, reindeer and goat, and, while in the stone age, so far as weapons, implements and tools are concerned, had begun to use gold, silver and amber for decorations.

Very likely they spread from Central and Northern Asia before that arm of the Polar Sea which once ran south into the Caspian was closed. Very likely other swarms followed more easily after that separation between Asia and Europe was gone, when only broad rivers flowed northward and northwestward into the icy sea and the Baltic. Those rivers have shown the way to greater and more powerful nations of the same stock within his-



ROCKHEWN TOMB AT KEUIRASHI, ASIA MINOR, IN ANCIENT PHRYGIA
The front copies in stone the façade of a magnate's house in timber construction.

torical times. There is no reason to suppose that the "earliest" men who passed over into Great Britain and Ireland could not have navigated the Caspian, its northward-stretching strait and the Baltic, for the daily necessities of fish-eating savages train them to dare wide expanses of water with boats of the most primitive sort. In Great Britain and Ireland there is in the coracle a survival of the primeval canoe which is found pretty much everywhere where men have hunted or kept animals which have skins suitable as coverings to frames, fitted to the purposes of shelter and of navigation.

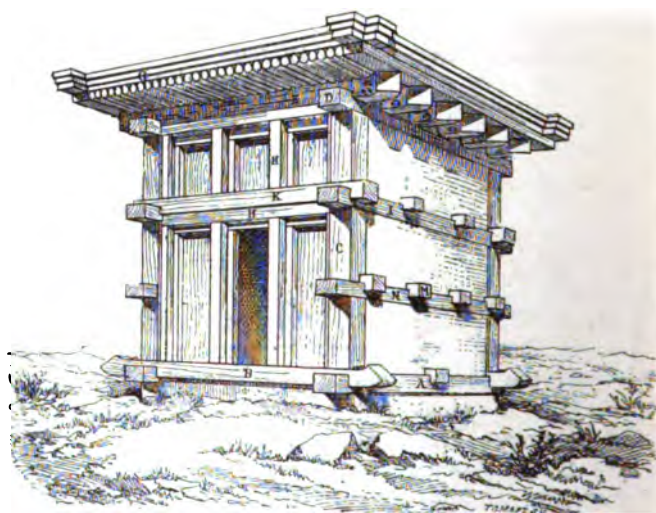
On the southern shores of Great Britain ancient dwellings are discovered carved out of the chalk. They are more or less circular pits which must have been entered by a ladder or by a pole furnished with cross-pieces or mere notches to keep the foot from slipping. That they were not merely granaries for storing acorns or barley, smoked fish or flesh, is evident from the presence of tools and implements. Their size and shape suggest that a circular hut or cabin above gave the pattern. Indeed, if an adventurous boy should build himself of osiers and leather a round coracle like those still found in English and Irish villages for use on ponds and streams, and then camp out on land with the overturned coracle for a shelter, he would be merely doing again what the primitive inhabitants of Europe did. To dig down beneath the coracle for warmth in winter would be only natural. So we perceive, and by no means for the last time, the intimate connection between house and ship, between man's first habitation on land and his floating home on water.

Frank Stockton's "Rudder Grange" and the home of Peggotty on the strand in "David Copperfield" are indeed picturesque and startling habitations, full of the pleasure of the unexpected, yet they are so because we

have got very far away from the primitive methods of our remote ancestors, so far, indeed, that they have all the charm of novelty.

Without speaking at length regarding the ship-formed stone graves of Phrygia which were noted by traveling Greeks five centuries before Christ, or the boat-shaped graves on the island of Majorca, or the boats used for tombs of great men within their grave-mounds by the Norse and Swedes, it is enough to recall the fact that tombs very generally imitate the dwellings of the living. This fact is particularly obvious when one sees the rock-tombs in Asia Minor, where the living rock is so cut as to exactly imitate the house-front, or such examples carved on four sides as the Harpy tomb in the British Museum, where one finds all the beams and uprights and roof of a solid frame house copied in stone, or by certain minor examples of tombs in the rock with decorative house-façades left by Etruscan settlers in Italy. Thus it is in Egypt also: from the rock-cut or stone-built tomb we gather what the houses of the living were like, and in some cases at least can guess at the general appearance of their boats. The cabins of the North American Indians, as we see them portrayed by Dutch and French travelers in the sixteenth and seventeenth centuries, are not unlike the big canoes they found on the Hudson and St. Lawrence.

Like these red men and like the blacks of Africa, the early inhabitants of Europe did not add room to room to form a many-chambered house, but added hut to hut within a stockade or ring-wall of earth reinforced by logs and sometimes, for additional safety, defended by a moat. There would be a larger house for the head of the family and his men, a hut for each of his wives, a granary separate from the rest and perhaps a stronghold for portable property such as arms, clothes and valuables. The kitchen would be independent of the banqueting hall. This separation of buildings is still to be found in farms



RESTORATION FROM TOMBS OF STONE
of a typical house of hewn timber in ancient Lycia, Asia Minor.

in Europe and America to some degree, but it is on the Baltic that the old ways are clung to with the greatest persistence. Among the Finns, Esthonians and Lithuanians, among the Russian peasants of Aryan and non-Aryan stocks the bath-house and the kitchen are separate from the farmhouse or may be side by side under one

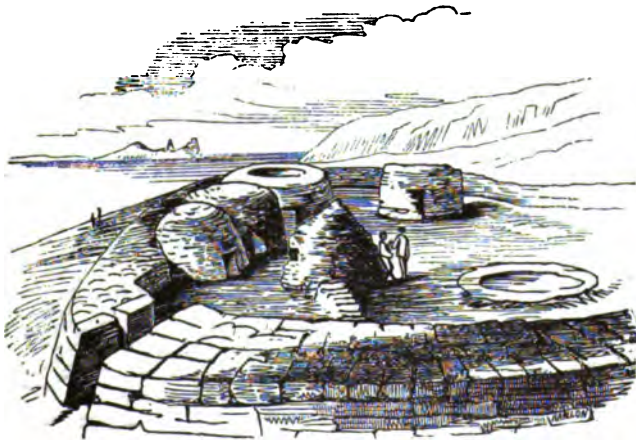
roof. For cleanliness these people rely on steam, not on water. They heat stones in a corner of the bath-house and pour water on the hot stones, then the bather enters and is massaged in the vapor. This primitive method, which we find among the American Indians, is still practised in Iceland, an island peopled by Scandinavians a thousand years ago. Thorvaldsen when a boy in Iceland



FRAGMENT FROM RELIEFS ON COLUMN OF ANTONINUS, ROME,
Round room and wattle huts like the famous buildings once common in ancient Europe, described in extant Gaelic literature of Ireland.

took his weekly vapor bath with the rest of the family in such primeval surroundings, as unconscious of the wickedness of nudity as any Japanese or Greek.

So in Ireland during the heroic period represented by the old legends and ballads which survive in Gaelic the honored guest was conducted to the bath by the ladies of the family. We find traces of these simple rules of hospitality in the French romances at the time of the Crusades, romances that caught their inspiration from lost Welsh and Breton originals. And it is in Ireland that we find curious survivals of human habitations which owe their preservation to the fact that they were built of stone.



STONE REMAINS OF ANCIENT "BEEHIVE" HUTS IN THE FORT OF THE WOLVES,

West coast of Ireland, showing the rooms of later architecture divided into separate huts for eating, sleeping, prisons, guard-houses, etc., before the Norman Conquest.

Ireland was a heavily wooded country for the most part. Wood and wattle supplied farmhouses, hostelries and the residences of kings, as well as churches, chapels and oratories. On the west coast, however, a natural lack of timber forced the earliest nomadic tribes and the

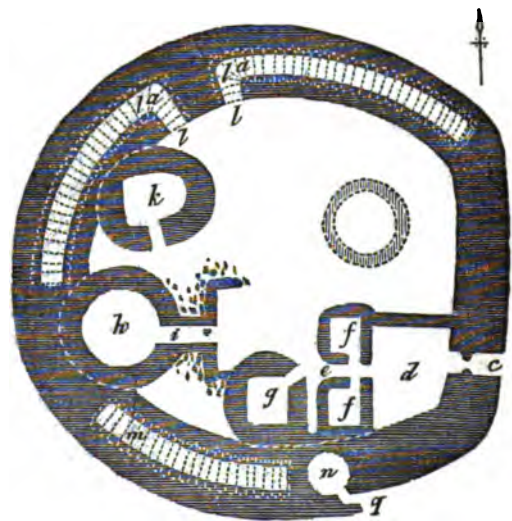
hordes of intrusive and conquering Kelts to use stone. In walled settlements on western promontories we find the "beehive" huts which represent the several rooms of a modern house. They are like the cup-shaped tents of the Mongols, and still more like the igloo which the Eskimo builds quickly and with art from slabs of solidified snow for his winter lair. The raths and lis defended by



BUILDING ON A FARM AT PÜHHALEP, ESTHONIA
on the Baltic, showing combination of kitchen and bath houses under one thatch. Bathhouse of stone, kitchen of timber.

walls and moats of earth on many a hill throughout Ireland must have contained similar huts on a larger scale to meet the requirements of families and clans, but the wood and wattle have perished, while the "beehive" huts of stone are still visible.

In the actual beehive, in dove cotes and round thatched outhouses for sheep, which we still have with us through-



PLAN AND CROSS SECTION OF ANCIENT FORT OF THE WOLVES, WEST COAST OF IRELAND,

Showing arrangement of hut-rooms of the Rath and Lis in the wooded parts of the island before the Norman Conquest.

out Europe generally, there are survivors of one of the most primitive of human habitations, but relegated now to the sheltering of farm animals and the honey-hording bee.

Here and there in the British islands and on the Baltic are old, single-room cabins that lack even the chimney,



INTERIOR OF A FARM HOUSE AT PUHHALEP, ESTHONIA,
ON THE BALTIC

showing the oven on which the farmers lie for warmth in Winter.

the smoke from a central fire finding its way out through the thatch. The stove of unburnable clay, brick or stone is an invention which has added enormously to the comfort of northern races, though perhaps it has not encouraged vigor. It has relieved the home of smoke and saved the people from certain diseases of the eyes, but it has interfered with ventilation, and perhaps lowered vitality thereby. The practice of sleeping on the broad top of such stoves in air exhausted of oxygen, as it obtains in Russia, is certainly bad for the health.

One may see in the Finnish and Russian farmsteads the gradual coalescence of the separate farm buildings and the conversion of the big stove to a fireplace for cooking as well as for warming the main room. In Germany one finds in houses of the last century the big heating stove built into partition walls in order to warm two rooms. And in the United States we have colonial farmhouses with a single chimney stack in which the open hearth for kitchen purposes is backed by an oven approached from outside the house, where the bread was baked. In the not far distant times a German village would have one oven for all, standing separate from all the houses, and each villager had the right to use it in turn.

In Ireland there are curious examples of church architecture that show a similar division. The old oratory, surviving where built of stone, is a very small building indeed. Only the chief personages of the neighborhood could have assisted at the ceremonies; the farmers and peasants must have knelt outside. As a safe place for the valuables of the church a round tower with steeply pitched roof was built near by, at first doubtless of wood and wattle, as its shape indicates, but later, for security against fire, of stone. The clergy were housed near by in huts or stone buildings of slighter workmanship which have disappeared, leaving oratory and round tower in charming simplicity side by side. The round tower not only shows by its shape and banding the original basket-like structure which it copied in stone, but it recalls the military tower raised as an outlook, whence signals could be made by horn, by bell or lantern whenever danger was descried. For most of the famous round towers of Ireland—and beautiful bits of workmanship they are—were built during the centuries that were notable for the raids of the robbers from the Baltic and the no less destructive wars of the Irish clans among themselves.

The legends of the Lapps and the Irish furnish many curious parallels, but none more curious than a tradition among both peoples of a vanished race with whom the earlier inhabitants waged war, not so much by physical means as by magical. The Tshuds, apparently, were an extremely able and civilized race in the eyes of the Lapps, but baleful owing to their powers of sorcery. They assign to them ancient sites of cabins having pits underneath like the pit houses of Great Britain. In general terms the same is found in Irish legend. The Sidhe are a vanished magical race, preeminent as artisans and strong in sorcery, who dwelt in mounds after they had been defeated by intruders from beyond the sea. They are in fact the modern fairies of Ireland—the Farshee or man-fairy, the Banshee or woman-fairy. Evidently the Tschud of the Lapps is the Sidhe (shee) of the Irish, representing an aboriginal race in Europe which was almost exterminated wherever it attempted to keep itself apart, instead of submitting to become the serfs of the conquerors, but in cases of survival very naturally occupying the remotest districts and hiding from the oppressor in cleverly hidden underground runs like the rabbits and foxes of the field.

When Shakespeare was putting in the mouth of Mercurio that exquisitely humorous description of the doings and appearance of Queen Mab, in which the fairy folk are seen shrunken to the size of insects, the Irish were listening to tales of Queen Meave, a real woman although a magician, closely allied to and indeed descended from the Sidhe but human in her feelings, a woman full of ambition and strategy, amorous and vindictive, who finally



FRAGMENT FROM THE RELIEFS ON THE COLUMN OF ANTONINUS,
AT ROME,

showing heads of Roman and barbarian soldiers. In background an example of round wood-and-wattle house common to Great Britain, Ireland, Gaul and Dacia.

dies in old age of a well-directed stone from the sling of an enemy. Mab is immortal as fairies go; Meave is a mortal who does not pass the natural limit of age. The Irish kept a clearer hold of tradition which handed down the story of an ancient race that lived under ground in a realistic way, somewhat as the Norse and Danes consid-



TOMB OF THEODORIC, KING OF THE GOTHs, AT RAVENNA, ITALY.
REAR VIEW.

Note: The two stairways are additions made 1,000 years after. The surrounding ground had a much lower level when the tomb was built.

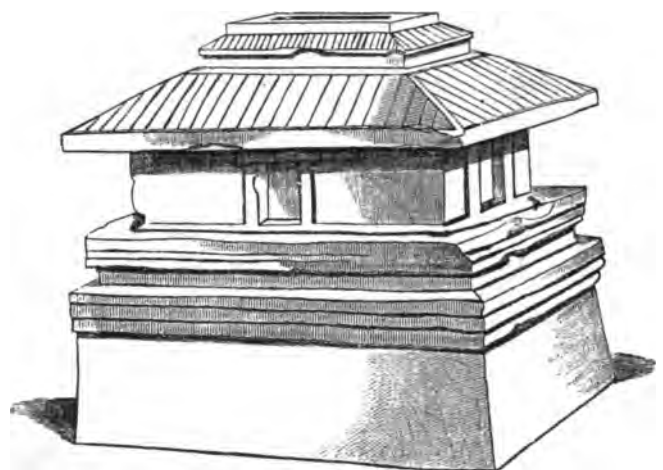
ered the trolls as half-human beings inhabiting the rocks and hills. Echoes of these troglodytes resound through the epic of the Esthonians, where the son of Kaleva is harassed by the magic of such dwellers in the earth.

Lake dwellings, built on platforms supported by poles and tree-trunks rammed into the beds of ponds and lakes, appear to have been a rather common form of habitation in Ireland and Great Britain, Switzerland and the Netherlands as well as in parts of Italy. Such must have been the beginning of Venice. But one looks in vain through folk-lore and legendry for reminiscent hints of this phase of early human residence in Europe. As to cave dwellers, there are indications. One department of the large store of tales an Irish bard was supposed to have ready in his memory for instant recital consisted of stories of adventure in caves. So far as can be learned from the sites of lake dwellings discovered in Swiss lakes, the architecture was simple and consisted of wooden cabins and round wattled huts like the farm buildings of a later epoch on land. Obviously the lake dwelling was guaranteed by its position from sudden attack on the part of robbers coming through a thickly wooded country, provided they had no boats of their own. It must have been men the lake dwellers feared, not wild beasts, for the only dangerous animals were the bear and wolf, and these would not enter houses even if impelled by hunger to affront the perils of bow and spear. Dwellers in villages of this kind must have become amphibious and accustomed from childhood to handle paddle and oar. From carvings on rocks found on the Baltic coasts and in Ireland one may safely infer that boats were propelled in the Indian fashion, facing the bow, and that the large dugouts were rowed by men standing rather than sitting, as we find it still the custom in Venice. For smooth waters the advantage of an upright position facing the bow is obvious. In a seaway, however, perhaps a seated position with face toward the stern is compulsory.

It is in Italy that we get a hint of the forms of houses that were homes to a population which knew nothing of Greeks and Romans. They reflect an age when the Dorians had not yet seized on Greece and the Eternal City did not exist. And we owe this hint to the very natural and human habit of burying the dead in something which simulated the dwelling above ground—to

that and a stage of civilization which permitted the modeling and baking of clay. "Hut urns" have been unearthed in Italy which reproduce on a small scale a roundish yet not exactly circular cabin with a roof inclined somewhat to shed the rain and a wide door on one of the longer sides. These urns give one a suggestion that the originals were of hides stretched on poles and cross beams. We do not see the plaited effect of wattled walls or the suggestion of a thatch. Such habitations would suit very well those nomadic tribes proceeding from Asia by way of the Hungarian plains or southerly through Syria, Egypt and north Africa, bringing with them the horse and ox, animals large enough to provide materials for the covering of substantial tents or cabins. Other urns for the bones or ashes of the dead, found in Italy, represent a much more advanced form of architecture. They have been assigned to the Etruscans. These cinerary urns copy a well-built house of an oblong square shape with wide eaves and a roof-tree considerably higher than the eaves, giving an ample shed for water. They stand on a platform, have doors if not windows, and approach to an astonishing degree the architectural lines of houses in Japan and China, lacking, however, the up-tilted corners so characteristic of dwellings, palaces and temples in the Middle Flowery Kingdom, in Mongolia and Japan, in Burmah and Siam. This is only one of many resemblances between ancient races of the Mediterranean and the yellow men on the other side of Asia.

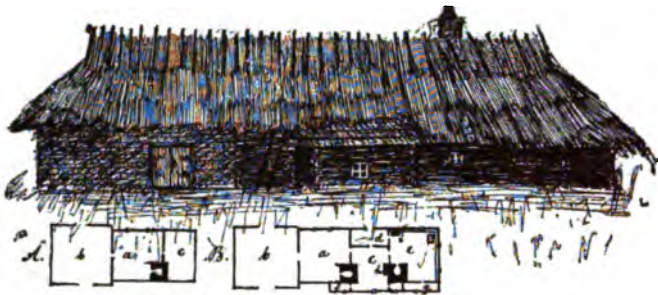
At Ravenna, the Gothic conqueror, Theodoric, caused his tomb to be built in gardens which at his period lay far below the present level of the city. This curious piece of architecture, like the much older Pantheon in Rome, preserved the ancient circular shape that has lasted to the present day in the round towers of Ireland. We must imagine the two stairways absent—for they are comparatively recent additions—and must replace a circular portico supported by marble columns running round the upper story. Doubtless the roof supported chariots and statues.



ETRUSCAN ARCHITECTURE. URN FOR ASHES OF THE DEAD.
Terracotta, shaped like an Etruscan house or temple, recalling Chinese buildings of a later day. Found at Clusium, Italy.

Of the habitations of Europe in the time of Charlemagne where Roman architecture had not penetrated, we may gain some idea from Irish literature. Ireland was not entered by the Romans, and though in the course of British raids into Ireland and Irish raids into Great Britain some knowledge of Roman architecture may have

passed into the western island, we may feel confident that it could not affect the inhabitants. It was the Danes and Norse who planted towns in Ireland after the first destructive impulse of the corsairs was exhausted. To

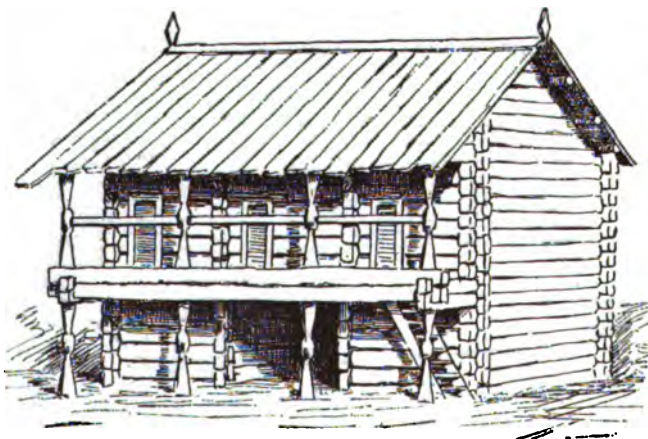


HOUSE AT PÜHHALEP, ESTHONIA ON THE BALTIC.

Wood and thatched, showing combination of several farm huts into one long building.

them Ireland owes Dublin and Wexford, Cork and Limerick, perhaps Galway also. Before their coming, before commerce may be said to have existed, the nearest thing in Ireland to a town was a temporary settlement in booths for a fair or a collection of cabins and huts round some famous church, or the coming together of scholars to attend one of the celebrated schools from which went forth to British and Saxon England and to the continent those Christian missionaries whose names are found in many churches as well as the learned men who made their mark at the Court of Charlemagne and his successors—Alcuin, Duns Scotus, Erigena, etc.

We learn, then, from descriptions of the palaces of Irish kings and chiefs wealthy in cattle that the sleeping and banqueting hall was the same independent structure, that it had a hearth at the center, presumably without chimney, but perhaps with some matter of vent hole for smoke in the roof. There seems to have been as a general rule but one doorway. Couches, sometimes having canopies over them, were ranged round the walls and the champions and leading vassals, the relatives of the king, and others who had the right to be present, were placed by a chamberlain according to their rank on sep-



TREASURE LOFT.

Built of timber and still to be found on the Finland Farms in North-eastern Bothnia on the Baltic.

arate pillowed couches, their shields and spears and swords being hung above the couch on the wall.

Similar square halls, the roof supported by four pillars, are represented in Etruscan tombs, which show also

the couches and the shields and helmets hung on the walls—all carved in stone.

Precedence was even more of a nuisance than it was later. The provincial king and his wife occupied the highest and largest couch. The front of that couch had the greatest amount of carved, painted and gilded ornament, or it was plated with bronze or silver repoussée work, often heightened by gold. A pillar of bronze near the king's right hand served as a means to call the banqueting or deliberating court to order. If champions wrangled about food or precedence and a hubbub arose, the bronze pillar was smitten and silence thus secured. We read also of silver mounted lintels over doors and of elaborately carved chairs and four-poster couches.

At a comparatively early date must have set in the fashion to build a balcony or sun-parlor over the entrance to a chief's house, a small room out of which in time grew the conservatory. Balcony is a Persian word, *balakaneh*, meaning the outside room. The Irish *grienan* or sun-room appears to have been a balcony more or less enclosed which commanded the inner part of the hall and the approaches to the door. When Cuchullaind,



INTERIOR OF A TIMBER TREASURE LOFT.

the Irish Hercules, pushes up one side of the banqueting hall of Bricriu Poison-tongue, he upsets that worthy and his wife, who are in the *grienan* looking on at the ruction they have slyly started. The luckless hosts fall from the *grienan* into the manure heap near the door, fate having willed that the mischief-makers, who were of too low a rank to join their own guests at their own board, were not even to look on at the feast with impunity. This is an Irish example of the gradual multiplication of rooms under one roof in place of their separation into as many huts or cabins in a yard or within an embankment.

Modern examples of separate buildings which we think of as rooms are the "treasure-lofts" found in Finland and on the Baltic elsewhere as parts of the farm complex. The illustrations show exterior and interior of such structures where the furs, coverlets, gowns and gala ornaments of the family are kept. Sometimes it consists of one hut, sometimes of the upper story of a more or less carved house or cabin. Allusions to these *luhtis* or lofts abound in the "Kalevala" and other Finnish poems and folk-tales.

These are some of the primitive homes which our ancestors, we may be sure, loved with far greater constancy

than we do our comfortable, nay, our luxurious houses. This is the age of frantic movement, of steamships and railways, automobiles and flying machines. The world is turning nomadic again. We may soon find that the architect who wishes to keep up to the times will have to devise a movable house, not a mere revolving house, but one which can take the road and supply the modern craving for a purely physical, mindless getting-along-through space!



CARVED STONE MOTIVE ON THE TOMB OF THEODORIC, KING OF THE GOTHES, AT RAVENNA, ITALY.

Similar motives found on bronze and gold weapons of the Fifth Century A. D.

Recent Legal Decisions

(FROM THE IMPROVEMENT BULLETIN)

ARCHITECT'S DECISION NOT FINAL AS AGAINST OWNERS

Where a building contract provided that all disputes concerning the construction of the contract, etc., should be submitted to the architect, and that his award should be conclusive, an award which was arrived at by the architect by erroneously considering a sample of material and certain photographs as part of the contract, and refusing to consider a letter from the contractor to the owner construing an ambiguous provision of the contract, was wholly void.—*Snead & Co. Iron Works v. Merchants' Loan & Trust Co.*, 80 N. E. (Ill.) 237.

PLANK PLATFORM NOT NECESSARILY A SCAFFOLD

A plank, laid across two wooden horses, eight to ten feet high, on which laborers stood while inside a building engaged in putting a casing into a window frame, was not a scaffold, within Labor Law (Laws 1897, p. 467, c. 415, as amended by Laws 1899, p. 350, c. 192), Sec. 18, providing that a person, employing or directing another to perform labor in repairing or altering a house or building, shall not furnish scaffolding or other mechanical contrivances which are unsafe.—*Williams v. First Nat. Bank of Utica*, 102, N. Y. S. 1031.

ORNAMENTAL WORK NOT FIGURED IN ORIGINAL CONTRACT NOT A PART OF SAME

Where, at the time plaintiff contracted for the construction of the ornamental iron work of a building, the scale drawings were too indefinite to enable him to determine what was required, and the contract was am-

biguous in that respect, a sample of grill and certain photographs which were not shown to plaintiff until after his bid was accepted, which he thereupon refused to sign as illustrative of the work required, did not constitute part of the contract.—*Snead & Co. Iron Works v. Merchants' Loan & Trust Co.*, 80 N. E. (Ill.) 237.

WAIVER OF LIEN LAW RIGHTS

An architect having a right to enforce a mechanic's lien against a corporation, entered into a written contract between the corporation, the contractor and himself, and a person about to take the bonds to be issued by the corporation, whereby the contractor agreed to assume the claim of the architect, and the architect and contractor covenanted to release their liens. Held, to constitute a novation so that the architect could not thereafter enforce a lien against the corporation for his claim.—*Wyss-Thalman v. Valley Brewing Co.*, 65 A. (Pa.) 811.

CREDIT CHARGE ON WORK DONE ON CONTRACTOR'S ACCOUNT

Where a building contract provided that the architect was to select the finishing hardware at an agreed cost and at the contractor's expense, and that the contractor should furnish certain fixtures at an agreed cost, the owner was entitled, in an action on the contractor's bond, on the contractor's failure to complete the contract, to credit herself with such agreed amounts expended by her in completing the work.—*Jenkins v. American Surety Co.*, of New York, 88 P. (Wash.) 1112.

OWNER'S CLAIM FOR DAMAGES LIMITED BY CONTRACT

In a mechanic's lien proceeding by a sub-contractor, the owner cannot, as between himself and the sub-contractor, reserve any of the balance owing to the general contractor after proof of completion of the work, without having his damages established as between him and the general contractor, which, in the absence of a settlement warranted by the evidence, can only be done by counterclaiming and proving them; and hence, where the owner, instead of counterclaiming for delay against the general contractor and introducing the contract between them as a basis for proving his damages, counterclaimed against the sub-contractor, and did not introduce his contract with the contractor, and prevented the sub-contractor from doing so, he had no standing to assert a claim for damages under the contract for delay in finishing the work. *Phoenix Iron Co. vs. Metropole Const. Co.* Supreme Court of New York. 109 N. Y. Supp. 858.

Chelsea's Building Laws Rigidly Enforced

A conflagration such as recently laid waste the town of Chelsea, Mass., is not without its compensations if it teaches a better enforcement of building ordinances.

The new town, which was begun with characteristic enterprise before the ashes of the fire that destroyed its predecessor had fairly cooled, has elected a Board of Control bent on strict enforcement of every ordinance.

It has proved useless for property owners to question or ignore the orders of this Board. Failure to comply has resulted in vigorous action, and every safeguard possible is being used in the remodeling of old structures and the building of new to insure the town against any future conflagrations.

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PROBABLY one of the cheapest, and at the same time surest, means in the world for a notoriety-loving foreigner to attract attention to himself when arriving in this country is to issue a statement, if the press will lend itself to the scheme, deploring the lack of art and architecture in the new world. The plan has been a bit overworked, it is true, and is becoming a trifle threadbare in consequence, but it still appears wonderfully efficacious under ordinary circumstances, and with a little judgment and the co-operation which seems to be easily available should serve its purpose for years to come. If the traveler is alert and ambitiously resolved to make the most of his opportunities as indicated by the achievements of others who have traveled here before him, his criticism begins with an observation concerning the skyline presented to the approaching visitor by New York's tall buildings. This is denounced at once as little less than hideous. Next follows a comparison of our buildings themselves with those of foreign cities, and, needless to say, our buildings suffer greatly by the comparison. After having dwelt with some force and at considerable length upon our shortcomings in the matter of architecture, attention is called to our undeveloped parks, lack of civic centers, and scarcity of art objects, all before the distinguished guest has been twenty-four hours in the country.

WHILE the object in giving expression to these censorious comments and smug opinions is ordinarily not less plain than the tremendous conceit which prompts and pervades them, they have been so oft repeated, with but slight and unimportant variations, we

had about abandoned hope of hearing anything else. It is with particular pleasure and satisfaction therefore that we read that Dr. Carl Clemen, an eminent German theologian and scholar now in this country, has been favorably impressed with New York's high buildings. In fact, he has been quoted as expressing the opinion that not only are our skyscrapers wonderful constructions, but many of them are distinctly beautiful. Obviously this will not entirely dispose of the question, and doubtless some will be moved to inquire as to the doctor's special qualifications and knowledge of matters architectural, and while in all probability he does not profess to be an authority, we venture the opinion that both as regards technical knowledge of his subject and native perspicacity he will at least compare favorably with other strangers whose animadversions have been given undeserved weight and publicity.

AFTER all, much progress has been made with the problem presented to American architects by the advent of the skyscraper, and it appears doubtful if a more skillful adaptation of means to ends could have been devised by any of our numerous self-constituted critics. The great difficulty in design arising from the usual disproportion existing between height and base line has been successfully overcome in many recent buildings by adopting the tower or campanile form, by which parts of the structures only rise to great heights. In fact, if not eventually restricted in height by law, it seems not unlikely that the ultimate form of the skyscraper will resemble this type, which would also in a measure relieve the difficulties due to the unfortunate circumstance of the streets having been originally laid out for three and four-story buildings. But whether the further development of this strictly American product is checked by ordinance or not, there is small likelihood of the type becoming extinct. Its numerous undeniable advantages are too apparent for that, and any enforced cessation in the construction of lofty buildings in the larger cities of this country must necessarily be but temporary, and will inevitably be followed by a period of redoubled activity in their erection. Beautiful or otherwise, they are here to stay, and even the critics can hardly deny them a certain architectural grandeur not to be found in many of the justly celebrated and universally admired architectural monuments of the old world.

THE current reports of disastrous fires in Paris will doubtless come somewhat in the nature of a surprise to many in this country who had given much thought and study to the statistics that have been compiled and circulated by various bodies, and were calculated to show the almost insignificant fire losses in Europe as compared with those suffered in America. The impression seemed to have become quite general that these remarkably small losses abroad were due almost entirely to the high grade of building and construction work invariably exacted in all structures of any importance. While details in connection with these most recent conflagrations are lacking, unless the press dispatches are far more inaccurate than usual, it would seem that whatever the causes of the fires, the buildings burned about as readily as any of our own so-called fireproof, but actually jerry-built, structures that by their failure under test have done the cause of permanent fireproof construction such incalculable harm.

THE AMERICAN ARCHITECT AND BUILDING NEWS

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No. 1711.



WHEN, on the 16th of September, the new Brooklyn Academy of Music was thrown open for public inspection, more than ten thousand people availed themselves of the opportunity to inspect a building that meant so much in the educational, art, and social life of that section of Greater New York. Included among the throng that came to view this valuable addition to the architectural features of New York was the Brooklyn Chapter of the American Institute of Architects who visited the building in a body. To mark their appreciation and also to stamp their approval on the work done, the chapter gave a dinner to Mr. Herts and Mr. Tallant, the architects of the building. Mr. Carrol, president of the Brooklyn Chapter, presided, and the principal address was made by Mr. Cass Gilbert, president of the American Institute of Architects.

The consensus of opinion expressed at this dinner was that the plan has been perfectly worked out and that the general scheme leaves nothing to be desired, and that the acoustic properties were perfect. It may seem like a paradox to state that the problems presented in the planning of this building were difficult and complex on account of their simplicity. To construct a building that would be readily available for the presentation of the highest form of opera, to provide concert facilities, to give space for social, and oftentimes

political functions, and to include in its arrangement ample facilities both as to space and lighting for lectures and classes in art, together with many other necessary features, was the problem presented.

The old Academy served Brooklyn for more than forty years, or from 1859 until in November, 1903, when it was destroyed by fire. It was used for many great purposes, and its loss was so keenly felt that the necessity for its replacement was believed to be imperative.

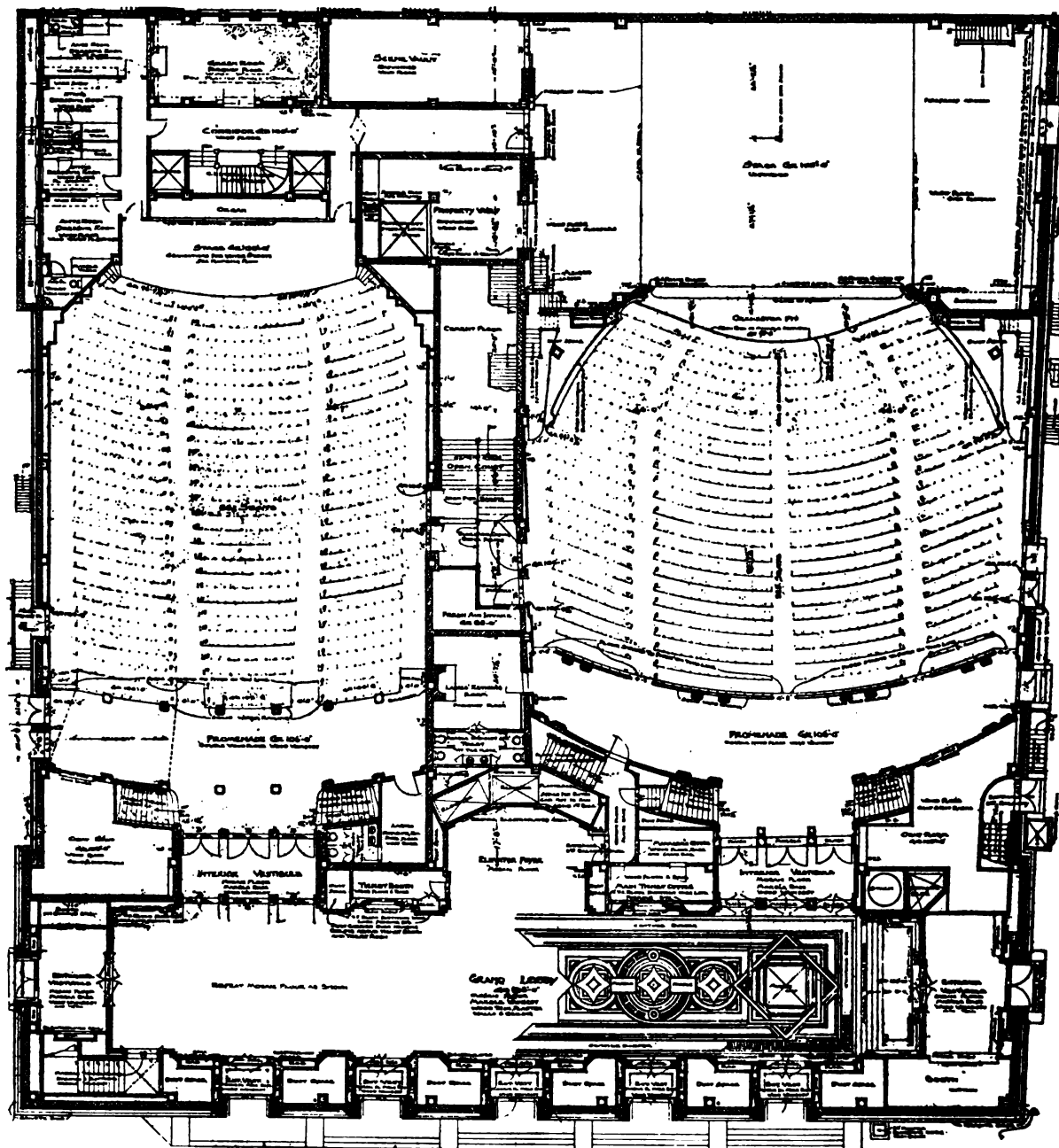
The plans were secured after a competition conducted after the best principles of architectural practice. The program of the competition was prepared under the direction of Professor Warren P. Laird, of the University of Pennsylvania, who, with Mr. John M. Carrere, of Carrere & Hastings, and Mr. Mead, of McKinn, Mead & White, composed the jury of award. The successful competitors were Messrs. Herts & Tallant of New York City.

Like all monumental structures whose purity of line and adherence to best architectural traditions accent their excellence, the Brooklyn Academy of Music is best characterized by the simplicity of its general arrangement. As indicated, this arrangement provides for a variety of functions. These are so related that they form a single organism or may be operated together. Characteristic of the best period of the Italian

renaissance, the exterior presents a simple, dignified ensemble. At all times have the architects kept in sight that this structure is intended as a conservatory of music and not an opera house alone. Within the limits of the classic design, the façade presents a dignified effect at no time by excess of ornamentation or unusual features suggesting the complex outlines of many buildings erected for similar purposes in many large European cities.

but in many cases the glaze has been left undisturbed to afford an opportunity to study the "weathering" effect on the more brilliant tones. As will be noted by the illustrations herewith, the ornamental terra-cotta has been used with rare good judgment. The aspect of the building, whether in the diffused light of a sombre day or the glare of brilliant sunlight, is equally attractive and satisfying.

Referring to the first floor plan which we reprint from



FIRST FLOOR PLAN.

Reprinted from THE AMERICAN ARCHITECT of Nov. 10, 1906.

The material used in the exterior is light brick trimmed with polychromatic terra-cotta. It presents a charm of color only to be obtained when directed by the best artistic perception. The tendency in this country to outrage æsthetic proprieties by the inharmonious introduction of color is so often met with that it is a pleasure to bear testimony to the excellent results that have been here achieved. The greater portion of the exterior finish has already been sandblasted,

THE AMERICAN ARCHITECT of November 10, 1906, in which issue the complete working drawings were published, the four main divisions of the building may be seen. Extending across the entire front is the large public foyer or lobby, which has an area of five thousand square feet. The foyer is designed to be of use as either a ball room or banqueting hall, and has retiring rooms, coat rooms, kitchens, and serving rooms, and other usual accessories. This foyer constitutes one



DETAIL OF BANQUET HALL.

of the four principal divisions of the building, the others being the opera house, the concert hall, and the Institute rooms. Each of these divisions while fully equipped for the use intended have been so designed as to readily serve two or more purposes.

The opera house on the right of the foyer is designed on lines governing the standard American theatre. It consists of a main floor and two balconies, with a seating capacity of twenty-two hundred. A distinguishing feature is the absence of tier boxes so usual in most theatre auditoriums. The sight lines are excellent, the compactness of the seating arrangements is a prominent feature, while the acoustic properties of which we shall speak more at length, are perfect.

The concert hall at the left of the foyer consists of a main floor and one balcony, and seats fourteen hundred. While primarily intended for the execution of chamber music it will also be used as the main lecture hall of the institute.

The Brooklyn Academy seats five thousand people. In point of area covered it is about one-half that of the Metropolitan Opera House in Manhattan, while in seating capacity it is one-third greater, or to be exact, the Metropolitan seats thirty-three hundred. The seating in the Brooklyn Academy is divided as follows: Opera house, 2,200; concert hall, 1,400; banquet hall,

600; lecture halls of the Brooklyn Institute of Arts and Sciences, 400; four small lecture halls 100 each, 400. Total, 5,000.

With a national gallery of arts assured, the completion of this building, containing in the highest sense the principal educational organizations of the Borough of Brooklyn, makes possible the initiative in this country of a National Academy of Music.

Referring again to the first floor plan, it will be seen that the elevators are centrally grouped between the opera house and the concert hall, thus giving access to the foyer, both auditoriums and the banquet hall. They are balanced at the rear of the opera house by second balcony staircases, giving symmetrical form to the rear portion of the auditorium. In addition to the four principal divisions above described, the plan includes the executive offices of the Brooklyn Institute of Arts and Science, dressing rooms for two hundred and fifty people, principals and subordinates, a band room, with space for rehearsal of seventy-five musicians, and large studio rooms for life classes and for drawing and painting. The mechanical arrangements throughout are of the highest order, and the ventilating and heating systems introduced were pronounced by the visiting members of the A. I. A. apparently perfect in every detail.

The general color scheme of the interior decoration treatment leaves nothing to be desired. Its excellence may be judged from the restfulness of its effect on the beholder. At this present writing the main mural decorations have not yet been placed in position. There is a limitation to human effort, and Mr. William DeLeftwich Dodge, the artist, has not been able to accomplish in the time at his disposal, all the canvases necessary to complete his most excellent scheme of decoration.

To thoroughly appreciate all that has been accomplished in the planning and erection of the Brooklyn Academy by the architects more than one visit is necessary, as here many new problems in this class of structure have been met and successfully solved.

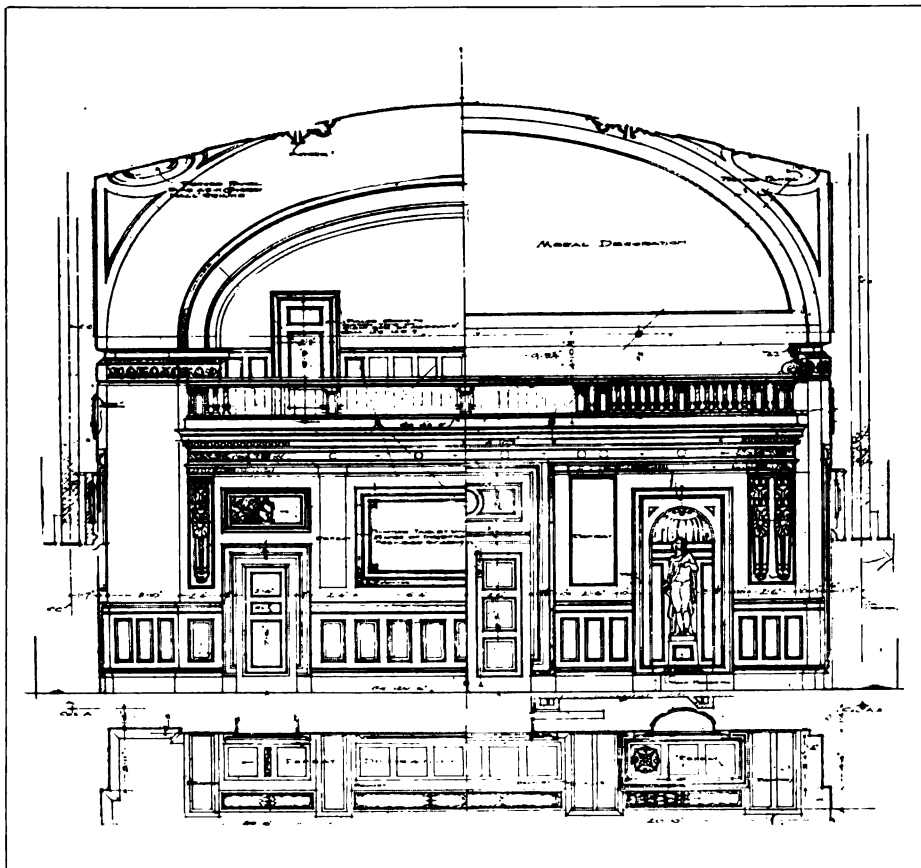
No description of this building would be complete without special reference to the wonderful acoustic properties which are said to be as perfect in their successfulness as the fabled "Ear of Dionysius." The effect is so startling, the ability to hear well in any part of the different auditoriums and halls so remarkable, that we were led to call on Herts & Tallant to ascertain if this result was deliberately achieved or as is so often the case, due to fortunate combination of circumstances.

We were assured that the acoustics of all auditoriums of their planning were equally satisfactory, and that after a close study of this problem, covering a



THE BANQUET HALL.

THE BROOKLYN ACADEMY OF MUSIC



END ELEVATIONS, BANQUET HALL.

period of twenty years, they were able and willing to guarantee the perfect acoustic qualities of any building they undertook. The New Amsterdam, Liberty, Gaiety and Lyceum theaters, all built by this firm, possess the same perfect quality of acoustics, while Daly's and Wallack's, remodelled by them, are equally satisfactory. Messrs. Herts & Tallant were engaged by the board of directors of the New German Theater, soon to be opened in this city, as supervising architects. In this case the building was an old structure originally used as a skating rink. They turned it into an auditorium. Here again the acoustic qualities are perfect. In this theater, soon to be illustrated in THE AMERICAN ARCHITECT, the decorative treatment is of the highest order. Messrs. Herts & Tallant directed the work in cooperation with Mr. Alphonse

Mucha, who visited America for this purpose.

The architects claim no necromancy in the attainment of these satisfactory results. They have only been secured after long and patient study and can be scientifically demonstrated. We are advised that the Brooklyn Chapter on the occasion of their visit made special reference to this most satisfactory condition, and we hope to present to the readers of *THE AMERICAN ARCHITECT* a series of articles scientifically setting forth much new and valuable data on a subject which is as important as it is baffling.

COLOGNE CATHEDRAL.

It was lately rumored that Cologne Cathedral was in a dangerous condition, and from some of the reports it might be concluded that a catastrophe was impending. An official report on the subject has lately appeared, which states that the mass of the building is sound and that the injuries are mainly confined to the delicate ornamentation. This will be reassuring to Germans, who have long esteemed the building as one of the factors in creating a united Germany. It would be impossible to prevent the weathering of the stone, and after seven centuries of exposure the surface must have become deteriorated. It is, however, possible that the effect of weathering has been increased in modern times, for smoke can be no more innocuous in Cologne



VIEW FROM NORTHWEST.

than in London. The authorities of the cathedral are mindful of the risks, and efforts will be made to ensure safety. The varieties of stone employed are not uniform in resistance to the atmosphere and its dangerous chemical constituents.—*Architect and Contract Reporter*.

A Reinforced Concrete Meteorological Observatory*

There has just been completed on the top of Blue Hill, a few miles from Boston, a reinforced concrete observatory which presents some interesting features aside from its stability. One of the essential elements required in its design was absolute resistance to the entrance of water under the conditions of heavy beating rains at very high velocities.

As designed by George T. Tilden, architect, of Boston, the observatory is of circular section, 17 feet 6 inches inside diameter, 20 feet 6 inches on the outside, and 33 feet high. The walls are of double thickness of 4 inches each, separated by a 10-inch air space, which provides an absolute means of preventing the passage of water.

The contract was awarded to the Aberthaw Construction Company, of Boston, already well experienced in this class of work.

Reinforced concrete was selected on account of its

many advantages, important among these being its unyielding stability, freedom from vibration in high winds, and its water-tight qualities so necessary in a location where wind velocities range up to 80 and even 100 miles per hour. Expectations have been so fully realized that the action of the self-recording instruments has been entirely free from the unknown errors which were caused by the rocking of the old observatory, and there have been no signs whatever of leakage.

The observatory is built on a ledge, the walls being bonded thereto; the floor is slightly raised to provide an air space beneath. A separate 4-inch granolithic finish was put on top of the first floor to provide a smooth tread as well as to prevent any possible access of moisture. The general concrete mixture was 1:2:4.

Steel reinforcement consists of 1/4-inch square twisted bars, spaced nine inches on centers, running in directions at right angles to each other, imbedded in the concrete near the surface, and extending into the wall.

*Reprinted by permission of "Cement Age."



BLUE HILL OBSERVATORY,

NEAR BOSTON, MASS.

The second and third floors and the roof are 6 inches thick, reinforced with $\frac{1}{2}$ -inch square twisted rods at right angles to each other and projecting into the wall. Those for the second floor vary in spacing from 12 inches on centers at the circumference to five inches apart at the center. Steel reinforcement for the third floor and roof is practically identical with that of the second floor, but with an added number of bars at each side and at the middle end of the stair openings, and roof scuttle. The reinforcing bars are placed close to the bottom of the floors, while those for preventing cracks close to the wall are placed near the top, being bent up at the wall and hooked over the nearest inside horizontal wall bar. All floors, including the roof, are granolithic finish; the latter is pitched toward the two water ways which connect with the drain pipes.

The inner and outer 4-inch walls are reinforced to the height of the second floor by $\frac{1}{4}$ and $\frac{3}{8}$ -inch twisted bars. Above this $\frac{1}{4}$ -inch bars are used entirely except where the $\frac{3}{8}$ -inch bars are placed for strengthening the flag pole socket. Concrete webs at 3-foot intervals connect the inner and outer walls, reinforced and connected to them by Z-bent $\frac{1}{4}$ -inch bars.

The stairs are of wood with wrought iron railings. The scuttle is provided with a window for observation

in wet weather. The windows are in all cases double sashed and tight fitting. For taking outdoor temperature in winter and for other purposes a sheltered set of instruments is fastened to the sill of the second story window facing the north.

Heating is provided for by a fireplace and grate on the first and second floors. One flue for both is built into the wall on the southeast side. Close to this are two other flues to be used for ventilating purposes. All flues terminate flush with the top of the parapet. Louvre dampers are used for regulating the opening of the ventilating flues.

Upon completion of the observatory many self-recording instruments taken from the old tower were immediately installed so as to make no serious break in the continuous yearly records, and such instruments as could be set up in the adjoining library building were made use of during the process of reconstruction. On the first floor, in addition to three standard mercury barometers, are self-recording daily, weekly and monthly barometers, as well as a self-recording wind velocity meter and a self-recording wind direction meter. The two latter are connected to the anemometer and weather vane by metal rods passing through iron pipes extending through the floors and roof. The rooms on the second floor are to be equip-

ped with steel cases for the keeping of observation records, while the third floor is to be devoted to cloud observations and astronomical work. On the roof are the continuous sunshine recorder, wind vane anemometer and flag pole, the latter for the display of weather signals.

From an architectural point of view the new tower closely approximates the style of its predecessor. The smooth, clean cut concrete work with picked finish brings out the simple but effective design—decidedly appropriate in a structure of this kind—in a much more striking manner than was possible with the old observatory.

Altogether, the observing tower is one of extreme durability, calculated to withstand the severe climatic changes which it is sure to experience. The concrete contractors and engineers are to be congratulated on a most excellent piece of concrete construction.

State Revenues from National Forests

Figures just made public by the Forest Service show that under the new law requiring 25 per cent. of the gross proceeds of national forest business to be paid over to the States and Territories in which the forests

are located, to be used for public schools and roads, the last fiscal year will yield these states \$447,063.79.

The amounts which go to each vary from \$313.68 for Arkansas to over \$75,000 for Montana.

National forest business is chiefly of three kinds, grazing, timber sales, and special uses; the latter comprising the use of lesser resources of the forests and the permits involving the development of water power.—*Building and Industrial News*.

Skyscrapers of Rome

ANCIENT REGULATIONS REGARDING THE HEIGHT OF BUILDINGS

"The skyscraper is no modern invention," says a St. Louis architect well read in the history of his profession. "In all the ancient cities where brick or stone was available high houses within the walls of the city were very numerous because of the lack of ground space for building.

"In the days of Augustus the tenement houses of Rome became so high as to be dangerous, and laws were passed condemning a number of tenement rows and ordering them to be taken down, while at the same time a law was enacted limiting the height of all future tenements to a hundred feet. For palaces and public buildings there was no limit.

"After the burning of the city in Nero's time the streets, which before were no wider than our alleys, were made broader. Some of them through the business part of the city were forty feet wide, and some of the great thoroughfares were sixty.

"The tenement height was lowered to eighty feet, and as a consequence the city spread far beyond its walls. The average height of a ceiling in a Roman tenement was a little over five feet. The windows were open holes in the wall, stopped in cold weather with board shutters. So the worst modern tenement is a palace compared with the skyscraper home of the poor when the empire was at its best."—*St. Louis Globe-Democrat*.

Recent Legal Decisions

THE TASTE OF THE ARCHITECT IS ADVISORY ONLY

The defendant had rented a one-story business building in Kansas City and he desired to remodel the interior and the front of the exterior so as to make of it an attractive restaurant. He employed the plaintiff by verbal contract to prepare drawings, plans and specifications for these changes and improvements and to architecturally superintend their construction. So far as the interior of the building was concerned the drawings and plans were to be such as would "satisfy the peculiar taste and desire of defendant." There was no such stipulation shown as to the character of the plans, etc., for the exterior front of the building, but the evidence showed that several times the defendant objected to certain designs and that the plaintiff changed them. Finally, the defendant objected to copper work in the front of the building and informed the plaintiff that he "wanted an electric sign instead—that he did

not want copper work at all." Plaintiff objected to the change on the ground that it did not suit his taste and that it would destroy the "architectural features"—that it "would destroy everything that was necessary for an architectural effect on the building." The defendant then informed him that the copper work must be omitted or the plaintiff must quit work, and the plaintiff quit, retaining the plans, drawings, etc., which were then in his office, and gathering up and keeping those that were in the building. The plaintiff attempted to recover on a *quantum meruit*, but the Circuit Court and the Court of Appeals held that he could not do so, having without proper excuse quit work in the midst of his contract, and that the taste of the architect is advisory only, while the taste of the employer is controlling. *Stroeh v. McClintock*, 128 Mo. App. 368 (Kansas City Court of Appeals).

BID EXCEEDING ESTIMATED COST

Where an architect was obligated by his contract to prepare plans and specifications for a structure to cost not to exceed \$20,000, and with all the extras not to exceed \$25,000, and the lowest bid under the plans and specifications prepared by him was \$35,000, or \$10,000 in excess of the highest sum the architect had assured his employer the building would cost, he cannot recover upon the contract, nor, if the plans and specifications are returned to him, can he recover upon a *quantum meruit*, since the employer has neither accepted nor received any benefits from his work. The payment of a sum of \$300 on account of the plans was held not to amount to an acceptance of them, this payment having been made before it had been demonstrated by the bids that the plans would not meet the requirements of the contract in the matter of cost of construction.—*Graham v. Bell-Irving*, Supreme Court of Washington, 91 Pacific Reporter, 8.

THE TECHNICAL MEANING OF THE WORD "DRAWINGS"

The word "drawings" applied to plans and specifications does not necessarily mean that the plans are complete, and it may be applied to an incomplete sketch as well as to finished plans.—*Atchison v. McKimmie* (Illinois Supreme Court), 233 Illinois, 106.

ACTUAL COST OF BUILDING MUST BE PROVED WHERE POSSIBLE

Under a contract to pay a firm of architects 3 per cent. on the cost of the building, for which they had prepared plans and specifications, the defendants, their employers, claimed that the cost was \$275,891.45, while the plaintiff claimed it to be more than \$400,000. The court held that as the actual cost of the building was capable of proof it was proper to exclude the evidence of experts, as to what the cost of such a building would be, the statement of one of the plaintiffs before the plans and specifications were drawn of the amount the building would or was to cost, and the statement as to cost in the plans and specifications filed with the building department, all of these being mere estimates of opinions, and the plaintiffs were non-suited.—*Israels v. MacDonald*, New York Supreme Court, Appellate Division, Second Department, 107 New York Supplement, 826.

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The Convention of the Architectural League of America.	
The Brooklyn Academy of Music; one of the notable exceptions to theatre buildings, which, as a class, are lacking architecturally.	
Exceptionally favorable conditions for building now prevalent throughout the East.	
Highly satisfactory effect produced by illumination of Singer Building Tower.	
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The Brooklyn Academy of Music (8 pages).	
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Stairway approach to Church of St. Trinità de' Monti, Rome.	
Stairway, Villa Conti, Frascati, Italy.	

THE convention of The Architectural League of America recently held in Detroit, has furnished additional and convincing evidence of the growing interest in, and consequent influence exerted by, architectural organizations. The advantages and benefits to be gained by associations formed to further the interests of the entire profession, by assisting in the better education of young men, by free discussion and interchange of ideas and by promoting good-fellowship in general, are becoming universally recognized. In no way does it appear that these objects and purposes can be better attained than by co-operation between the various bodies representing the profession in America. Unquestionably, too, the time for closer affiliation and co-operation in the educational work, at least of these societies, has arrived, and we esteem of particular value and importance therefore the action of the convention, looking toward the establishment of closer relations and harmony of action, where there obviously exists unity of purpose. We shall look forward with much interest to the fuller development of the plan adopted.

WHILE probably very few buildings are completed entirely in accordance with the conception and design of the architects who plan them it would seem that theaters and playhouses have been particularly un-

fortunate in this country in being owned, leased, managed or controlled by persons whose propensities for suggesting, even to the point of dictating, to the architect, to whom the preparation of plans has nominally been entrusted, are lamentably pronounced. As a consequence of this quality not ordinarily having been co-existent with any discernable artistic knowledge or appreciation, or technical ability, our theaters have generally been deplorably lacking in architectural merit. There have been notable exceptions, of course, especially in recent years, but as a class they are still woefully deficient. One of the latest exceptions to the general rule and possibly the most gratifying is the Brooklyn Academy of Music, which we are permitted to illustrate in this issue. Here one feels the architect has been allowed a considerable degree of freedom, and it would seem that the admirable results might reasonably justify and even tempt other theater builders to accord some weight to the designs and opinions of a mere architect.

A MAJORITY of architects and those engaged in building trades would undoubtedly join in the opinion that business has not been particularly active during the past year, although there have been many notable operations undertaken in New York and still more projected. It is inconceivable, however, that the present advantageous conditions for the improvement of property can long be ignored or regarded with indifference by investors. There has not been a time in recent years when building could be done as economically as at present, and it is doubtful if the opportunities now presented will be equalled for years to come, if ever. Anyone with property to improve, or anyone whose plans for the next decade include the erection of a building, or any structure whatever, can scarcely afford to defer immediate action. Prices of materials are lower than in years. Deliveries are prompt. Labor is abundant and unusually efficient. Contractors are undertaking work without consideration of profit in many instances in order to preserve their organizations. Money is plentiful and comparatively cheap. In fact, considering all features of the problem we are forced to the inevitable conclusion that if ever building can be profitably undertaken in New York now is the appointed time.

JUST at this time when the subject of illumination is prominently before us, due perhaps in part to the agitation of those who in answer to a demand, real or imaginary, have adopted this branch of engineering as their vocation, an instance in which exceptionally satisfactory results in lighting have been obtained, becomes of especial interest. Such an instance is shown in the exterior illumination of the Singer Tower in this city. It is all very well to give attention to discourses on a subject—explanations and advice are often interesting and sometimes valuable—but the careful study of a successful example generally results in more real benefits. Much has been written on the beautiful effects secured in the illumination of the grounds and buildings at the various expositions held in this country, but the effect of the illuminated Singer Tower as viewed from the river or bay on clear moonless nights is immeasurably more pleasing than any similar spectacle it has been our good fortune to observe. We commend it to the particular attention of those engaged in work requiring the solution of illumination problems.

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No. 1712

Rebuilding the Campanile of St. Mark's, Venice

IN a series of articles published by *The Builder*, London, a correspondent describes in a most entertaining and instructive way the rebuilding of the Campanile of St. Mark's, Venice.

It is now more than six years since the artistic world was shocked to hear of the collapse of this architectural monument, and it will be learned with satisfaction that the restoration is nearing completion.

This correspondent states that the lower portion of the original tower was probably commenced about the year 902, but the precise date of the setting of the foundations is not known with certainty. Tradition has it that the original foundation was constructed in part of the foundation of a tower built in the sixth century, as part of the fortification that surrounded Venice. This tower, it is stated, was increased in height for use as a watch tower, about the eighth century, after the foundation had been strengthened to bear the additional load imposed thereon.

This writer expresses a doubt whether the original footings either formed or were incorporated in the foundations of the structure commenced about 902. Careful investigation made by Cavaliere Boni in 1885 seem to

establish that the base as well as the superstructure of the ancient watch tower must have been removed before the building of the Campanile.

An examination of the old foundation, which was 48 feet square, made in 1904, showed that the space between the four

foundation walls was filled with loose stones about 6 to 9 inches across, no trace of mortar being observed. To transmit the superimposed load on lines immediately above the outer piles instead of making a solid block of masonry under heavy compression along the edges and carrying comparatively little weight in the central position is held by this writer to have been the object in view.

After the site had been cleared from debris and the foundations were exposed, various boreholes were made. It was ascertained that the substructure had acquired a condition of stable equilibrium and apparently was quite fit for supporting the

weight of the new tower. Nevertheless, recognizing the possibility that the shock of the falling masonry might have caused some undetected injury, and desiring to minimize the extent of any future subsidence, the commission decided to increase the bearing surface by

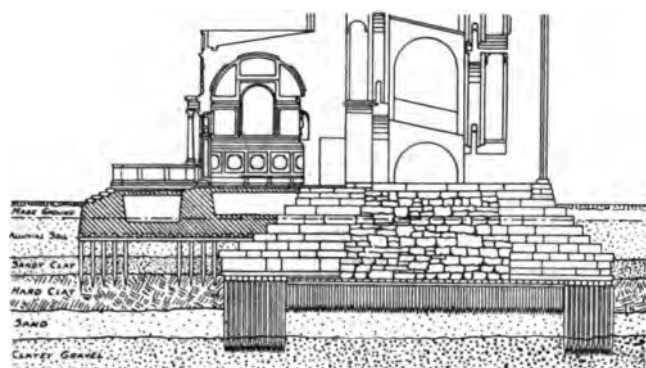


THE OLD TOWER OF ST. MARKS

VENICE, ITALY

building new footings to the width of from 18 to 21 feet around the old foundations.

Altogether, some 4,000 new piles were driven around the old footings and, after their heads had been trimmed off level, the interstices were filled in with cement mor-



VERTICAL SECTION, BASE OF TOWER SHOWING NEW AND OLD FOOTINGS

tar, and thus a basis was formed for the timber platform built as an extension of the ancient grillage. The new platform consists of oak planks in two tiers, the planks first laid being parallel to the faces of the old foundations, and those above at right angles to them. Cement grout injected into the joints serves to consolidate and bind together the planks.

The walls of the old foundation were built of stone obtained from the quarries of Istria, on the Austrian side of the Gulf of Venice, and as stones taken from different parts of the masonry were found to be in good condition, it was decided to use the same quality of material for the additional foundation work.

Examination also showed that the interior mortar was in a satisfactory state, but that the mortar in the outer joints had suffered decomposition to a considerable extent.

The new tower stands upon a base rising to the extent of five courses of masonry above the surface level of St. Mark's Square.

This feature of the design is really no innovation, as measurements taken after the collapse made clear the fact that five courses of the base originally projected above the ground, whose level to-day in the square of St. Mark is known to be some 20 inches above the level existing at the end of the fifteenth century.

Therefore, in providing the shaft with a base higher than that familiar to modern generations the commission was actuated by the desire to reproduce the appearance at first presented by the visible portion of its foundations, and at the same time proportion the shaft and its base so as to give the idea of security which had been to some extent taken away from the old Campanile by successive highway authorities.

Comparison between the old and the new Campanile shows that the principle of double-wall construction embodied in the shaft of the old Campanile has been followed by the designers of the new tower, but with certain modifications.

Each of the inner walls in the former structure was lightened by two lines of superposed arches. Inclined arches between the outer and inner walls supported the slope which served the purpose of a stairway, the thrust of these arches being exerted at one end against the ex-

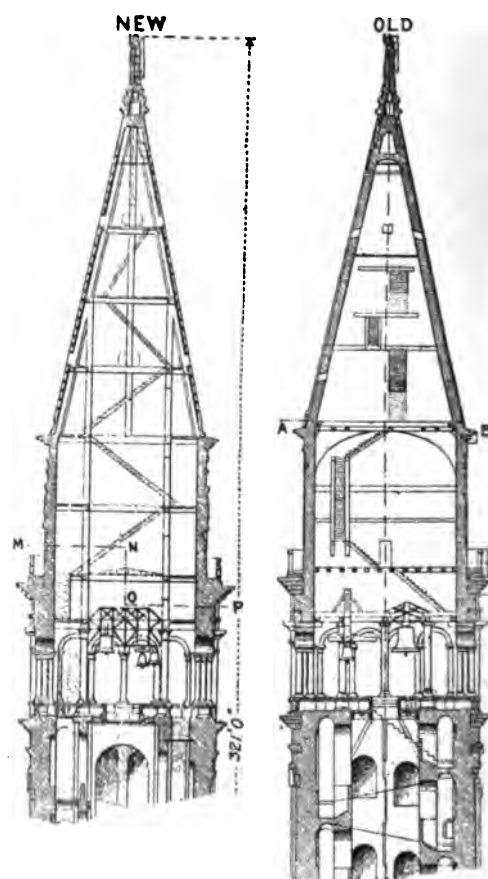
terior walls and at the other against the arches of the interior walls.

In the new tower the inner walls are of uniform thickness, pierced by a single line of arches in every case, and connected at the corners by piers.

Further, instead of the intermural arches tending to push assunder the walls, and even to injure the weaker series, the exterior and interior walls of the new Campanile are securely tied together by a reinforced concrete stairway, which is really a continuous spiral system of bracing. The walls are connected by steel tie-bars following the slope of the stairs and constituting reinforcement for the concrete, which, although finished on the soffit to give the appearance of arch construction, really acts in accordance with the principle of the beam. The stairway thus provides—between the two series of walls—a very strong and solid connection, equally capable of withstanding either tension or compression. This method of bracing the outer and inner walls is in every way worthy of commendation and will contribute materially to the strength of the structure.

The walls of the new Campanile from the base to the lower corner of the belfry are of brick, and to avoid compression of the mortar in the joints it was decided to lay the brickwork in mortar mixed in quick-setting Portland cement.

The bricks used were made expressly for the work by the municipality, and measure 12 inches long by 6



SECTIONS, NEW AND OLD TOWER

inches wide by 3 inches thick, approximately, and weigh about 12½ pounds each.

In their making special attention was paid to their suitability as to color and crushing strength as well as to their capacity to withstand heat, frost, rain and spray.

In concluding this interesting article, this correspondent, who goes into much detail and covers every part of this rebuilding, from foundation to the pinnacle which surmounts the Campanile, describes in the following words the novel measures taken to provide for the safety of the statue surmounting the pinnacle:

"To provide for the safety of the statue surmounting the pinnacle and to obviate the strains that would be developed in the spire during stormy weather if the figure were rigidly fixed, the commission has adopted a novel and ingenious arrangement. The base of the statue will

rest on steel balls carried by a metal plate, presumably of cast steel. The surface of this support will be curved so as to permit the base of the statue to move freely in any direction except vertically, under the influence of the wind. A steel bar anchored in the middle of the statue will pass through an opening in the base of the ball bearing and extending downwards for several feet, will be finished by a heavy counterweight. Thus the effect will be that the statue will be free to oscillate within reasonable limits, and so will relieve the framework of the spire from undesirable strains."

Systems of Mechanical Ventilation and Refrigeration for the Carnegie Safe Deposit Co.'s Vaults

By J. BYERS HOLBROOK, M.E.

THE safe deposit vaults recently opened by the Carnegie Safe Deposit Company are located on the Cedar Street side of the basement and sub-basement floors of the United States Realty Building (frequently



BASEMENT OR UPPER VAULT

called the north Trinity Building), 115 Broadway, New York City.

The vaults are not only the largest safe deposit vaults in existence, but they are unique in construction.

They are of the double-deck type; communication from the upper to the lower vault being obtained by both a stairway and an electrically operated passenger elevator. The vaults are built up of Harveyized nickel-steel armor plate, and so forged as to fasten together all plates by interlocking wedges. These armor plates are five inches thick and are finished on the outside with a fire wall of twelve-inch thick concrete.

The interior finish of the vaults is of polished steel, solid bronze and white marble.

The basement or upper vault is eighty-five feet long by twenty feet wide, and has a height in the clear of eight feet. Deducting the space occupied by deposit boxes, etc., there is left a total net volume of approximately 9,000 cubic feet in this vault.

The sub-basement or lower vault is 108 feet long, 31 feet wide and 8½ feet high in the clear. This lower vault is intended more particularly for individual coupon or private vaults and office rooms, arranged as desired for individuals and corporations by special contract. Deducting partitioning walls, boxes, etc., there

is left a total net volume of approximately 18,000 cubic feet in this lower vault. The combined net volume of both vaults is approximately 27,000 cubic feet.

In formulating the general designs for deposit vaults of this magnitude and to be in keeping with the many high-class facilities offered, it was decided to spare no expense as to the various component parts making up the mechanical equipment.

Especially considered was the problem of ventilation, and it was therefore decided to have installed a system of mechanical ventilation designed upon such lines as to insure a constant supply of fresh cool air (refrigerated in summer) with a coincident removal of the vitiated air. Further it was decided to install in conjunction with the ventilation, and as a necessary adjunct, a mechanical system of refrigeration, the latter being of such capacity as to cool to a relatively low temperature the air delivered by the supply fan to both vaults.

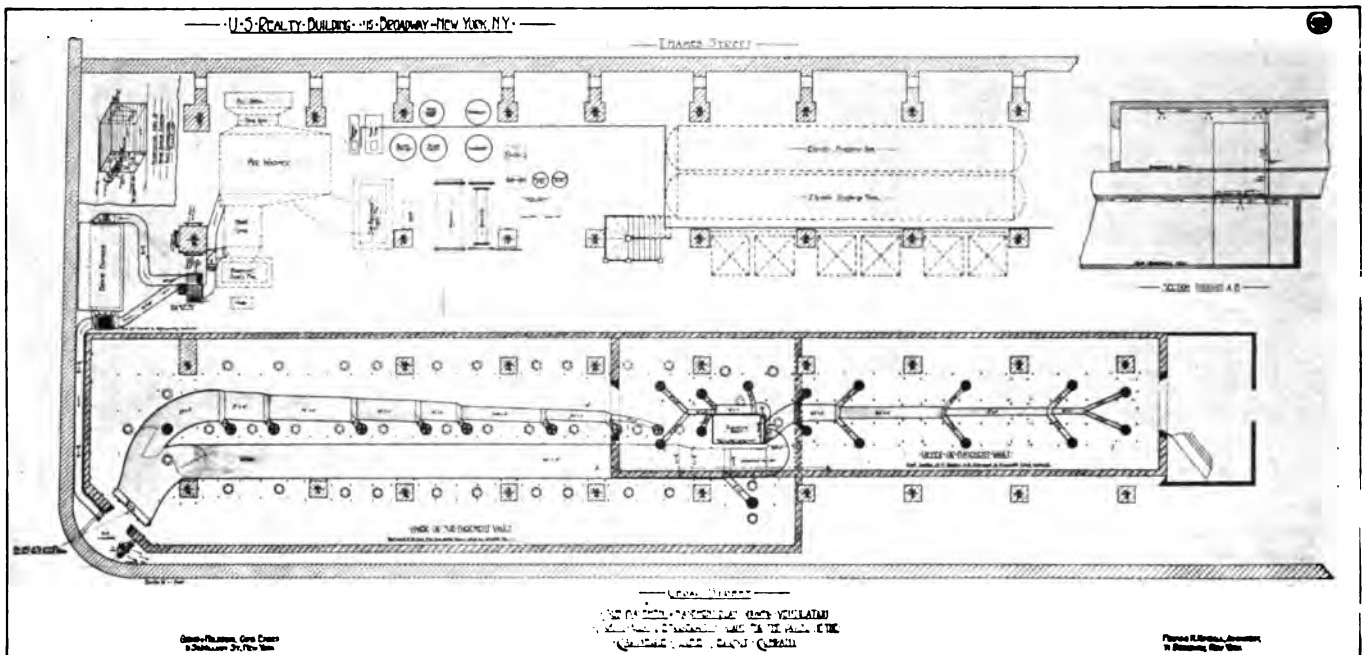
In general, it may be said that the mechanical system of ventilation for the vaults consists of cleaning the entering air by an air washer, cooling it by a refrigerating plant, forcing it under sufficient pressure throughout both vaults by a blower without causing disagreeable drafts, and automatically controlling its temperature by a system of thermostats. The building power plant, located in the westerly end of the sub-basement, furnishes all steam and electricity for the



SUB-BASEMENT OR LOWER VAULT

complete operation of the combined ventilating and refrigerating plants.

The main ventilating system, originally installed for supplying air to the general machinery room, certain portions of the basement and first floors of the build-



VENTILATION LAYOUT AND REFRIGERATION PLANT

CARNEGIE SAFE DEPOSIT CO.

ing proper, consists of centrifugal fans, tempering or pre-heater coils, the main heater coil and the general air washer. This air washer, as shown on the general plan, is located on the south side of the sub-basement and receives its air supply from the sidewalk level on Thames Street.

The operation of the air washer fulfills three requirements, cleaning the air by an arrangement of fine water sprays, reducing the temperature of the air, and by an arrangement of baffle or eliminator plates removing the water from the air before the same is drawn into the various supply fans. In cold weather, and to prevent freezing the water sprays in the air washer, there is installed, as already referred to, a pre-heater or tempering coil (supplied by exhaust steam in conjunction with the regular building heating system), the object of which is to raise the temperature of the entering air slightly above freezing.

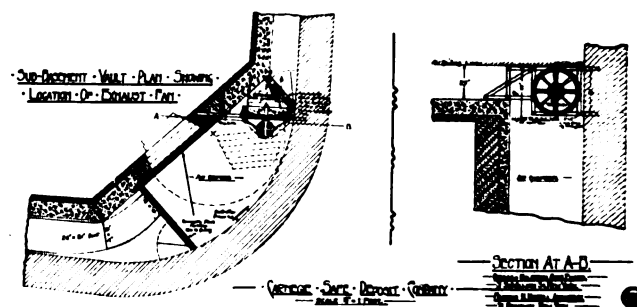
A main heater coil is installed for heating to a relatively high temperature the air forced by a special fan intended for the indirect or hot blast heating of the main first floor entrance vestibule and certain rooms in the Broadway end of the basement.

The three fans—the general machinery room supply fan, the vestibule heating fan and the supply fan for forcing air into the vaults,—are so installed and connected to the air washer that the entering air handled is thoroughly cleaned of all dust and foreign matter.

The "emergency door" located at the extreme northeast end of the sub-basement vault opens into a sealed air chamber as shown. No piercing of the vault walls, floors, etc., for the introduction of ventilating ducts, could be entertained, for the reason that when the vaults are closed at the end of each day, they must of necessity be closed and absolutely sealed. The installing of the "emergency door," therefore, made it possible to arrange for flexible and adjustable connections of the ventilating ducts, compressed air pipe lines for the automatic temperature control, etc. The ventilating duct connection of heavy copper is made each time the emer-

gency door is opened and broken or taken down when the vaults are closed. This flexible connection is made through the above referred to air chamber. Installed in the north wall of this air chamber is a disc or propeller type of exhaust fan driven by a direct connected electric motor. This fan is run at a fairly low speed and serves not only to exhaust the vitiated air from both basement and sub-basement vaults, but also to draw down and establish a circulation of the cool or fresh air from the basement vault ceiling outlets through both vaults and then out through the emergency door to the air chamber.

A preliminary study of the ventilating requirements and objects desired by the owners presented a problem calling for the following:



SUB-BASEMENT VAULT PLAN AND SECTION THROUGH A-B

- A rapid air change throughout both vaults, insuring a constant and ample abundance of fresh air at all times.
- Automatic temperature control of air supplied.
- The importance of having absolutely clean air.
- Chilling the air in hot weather.
- Introducing the air through grilles or outlets in the vault ceilings and in such a way as to obviate excessive drafts on the heads of occupants.

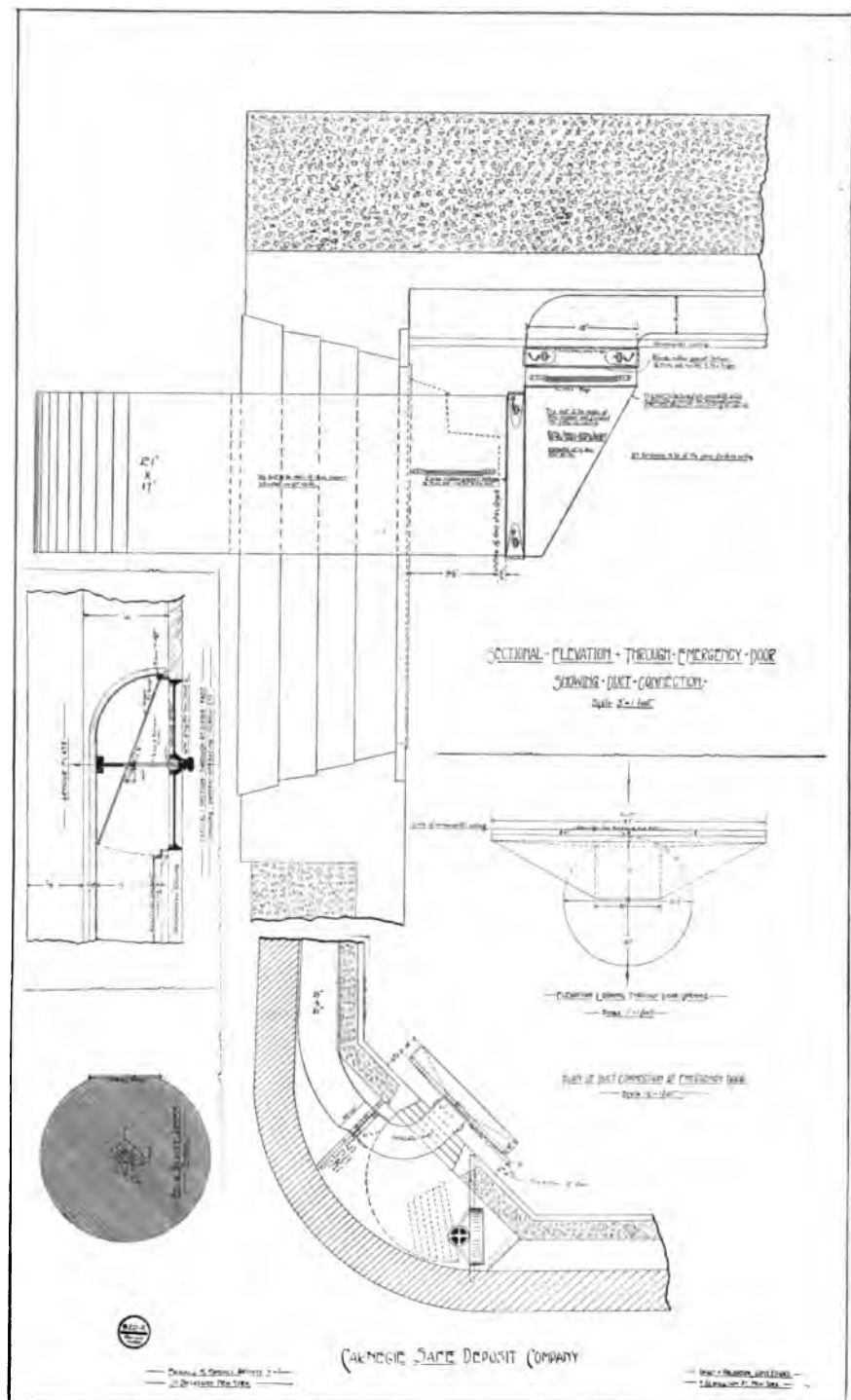
- (f) Running the entire system of ramificated ducts in an exceedingly cramped hung ceiling space in both vaults, which flat duct construction increases the air pressure excessively placed on supply fan.
- (g) An absolutely flexible duct connection to the supply fan.
- (h) Controlling the operation of supply fan motor from the vaults by "remote control."

Air Supply:

A study of the general layout of the sheet metal duct work shows a system having not only many turns, bends, etc., but the exceedingly undesirable sizes and shapes of these various ducts. All ducts throughout the vaults had of necessity to be carried in the ornamental hung ceilings and the net vertical space or height of same was limited to five inches. The ducts further required a high grade of covering (to keep the refrigerated air in hot weather to as low a temperature as possible before its introduction through the grilles), and the thickness was such that the remaining net inside height of ducts was made four inches. It is hardly necessary to remark that such flat duct construction imposed excessive air friction with a correspondingly high pressure with which the air had to be delivered by the supply fan. There are a total of twenty-five outlets or ornamental bronze grilles in both vault ceilings—ten in the sub-basement or lower vault and fifteen in the basement or upper vault.

All of these grilles or outlets are fitted with a specially designed and adjustable round dampers, which, by means of protruding thumb screws, can be opened wide, closed or regulated as desired.

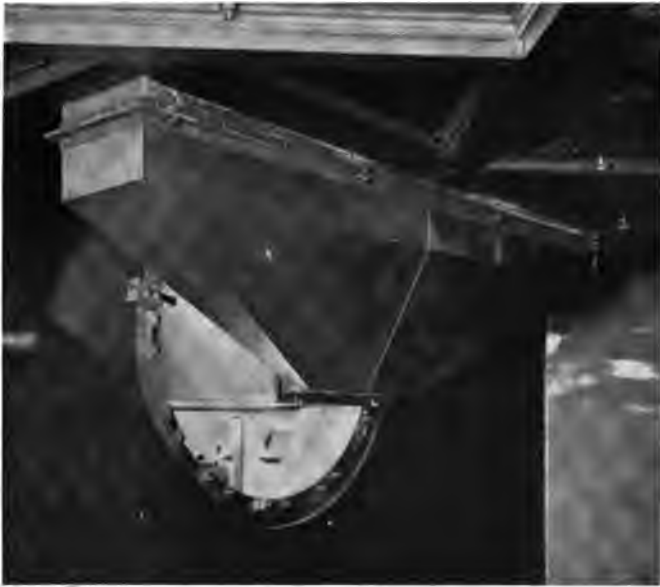
An inspection of the plan shows that the main duct after its entrance into the sub-basement vault ceiling, divides, one branch feeding the sub-basement vault grilles, the other running directly west, turning at the elevator shaft and thence up and into the basement or upper vault ceiling. This branch was run especially in this way in order to convey in a most direct manner the air to the upper vault. In the lower vault, and immediately after the ducts divide, there is installed in each branch an adjustable swing damper. By this arrangement the amounts of air for both vaults can be regulated as desired. By referring to the plan it will be noted that the supply fan furnishes air direct to the main supply duct or to the brine bunker or chilling chamber as desired. Sliding dampers or blast gates are installed in these ducts for this arrangement. The



SECTIONAL ELEVATION THROUGH EMERGENCY DOOR, SHOWING DUCT CONNECTION

intake duct connections to the supply fan are made both to the air washer and to the main heater coil and a graduated mixing damper, controlled automatically by a thermostat is installed in the combined duct close to the fan intake. This arrangement provides for supplying the desired amount of heated air in winter time.

The supply fan is of the regular steel plate centrifugal type, having a blast wheel 42 inches in diameter by a center width of $23\frac{1}{4}$ inches and is driven by a direct attached electric motor at a speed sufficient to create the necessary air pressure and to insure not less than 5,000 to 6,000 cubic feet of air per minute. This amount of air delivered into both vaults insures a complete air change every five minutes.



ADJUSTABLE CONNECTION TO VENTILATING SYSTEM IN SUB-BASEMENT VAULT AT EMERGENCY DOOR.

The motor for driving this fan, and which has a wide variation in speed, is mounted on a steel plate pedestal rigidly fastened to the fan frame work. The remote control of the motor is secured by means of three push buttons located on a column inside of the sub-basement vault. By this method the motor can be readily started, its speed increased or decreased, or it can be stopped as desired. This permits the attendants inside of the vault to have absolutely perfect control of the amount of air delivered to them. Furthermore, it places the motor and controlling apparatus under the supervision of the building operating engineer and does away with all care on the part of the vault attendants, which otherwise would occur if the controller proper were located inside of the vaults.

Refrigerating Plant:

This installation is of the absorption type and has a capacity of thirty tons refrigeration in twenty-four hours. It was not deemed advisable to use the system of direct expansion for the cooling of the air, particularly on account of the liability of ammonia leakage in the air bunker room. Therefore the calcium brine circulating system was adopted. The refrigerating plant is located, as shown on plans, on the south side of the sub-basement, and considering its ample capacity, occupies a relatively small amount of floor space.

In general the plant consists of an ammonia generator, an ammonia absorber, two ammonia condensers, one ammonia weak liquor cooler, one transmitter, one liquor heater and one calcium brine cooler. Further there is installed an ammonia feed pump of the single acting type, a duplex type brine circulating pump, the brine bunker for chilling the air and a tempering coil, the object of which is to reduce the excess of moisture brought over from the brine bunker room. The brine bunker room is therefore made up with a large amount of cold brine coils and to such a capacity as to lower the air temperature excessively below that desired in the vaults, the tempering coil then serving to reheat the air and to reduce the saturated condition of the same.

The steam valve to the tempering coil is operated thermostatically by a thermostat located in the main duct between the tempering coil and the air chamber.

The exhaust steam from both ammonia and brine pumps is used in the ammonia generator thereby reducing as much as possible the live steam consumption.

All steam condensed is re-usable for boiler feed purposes, the exhaust steam from pump being first cleaned by the main oil separator located in the boiler room.

The various coils in the brine bunker, made up of $1\frac{1}{4}$ -inch pipe, are so valved and connected up that they may be used in separate units. This arrangement allows of operating any set at will and prevents the clogging up with ice, which, should it occur, would interfere seriously with the direct passage of air through the bunker room. The various sets of coils, further, are alternately staggered so as to insure the maximum chilling of the air. The walls of the bunker room are built up of two layers of $\frac{7}{8}$ -inch thick tongued and grooved spruce with layers of insulating paper between and a 1-inch air space between the layers.

The brine mains are so run as to carry the brine from the storage tank to the bunker coils and back to the brine cooler, the circulation being obtained by means of the brine pump.

The results secured from the combined ventilating and refrigerating plant during the past summer, which has been one of a prolonged hot spell, have demonstrated the fact that the installation of the plants was warranted. The vaults have been cool and comfortable during the hottest weather.

The architectural treatment of the interiors is from designs prepared by Mr. Francis H. Kimball, Architect of the building; and the mechanical work, consisting of the air-cooling and ventilating plants, were installed in accordance with plans and specifications prepared by the writer and under the personal supervision of his office.

The New York Society of Architects and the Tenement House Department

At the request of Acting Mayor McGowan, Chairman of the Committee on Tenements of the New York City Charter Commission, the New York Society of Architects has prepared a brief of much interest.

This brief, during the consolidation of the Tenement House Department with the Building Bureau in each of the Boroughs of Greater New York, is in part as follows:

Each of the departments in question has to do strictly and exclusively with building construction. The fact that a building is a tenement house—i.e., a dwelling occupied by more than two families living separately—does not constitute a sufficient ground for placing its planning and erection under the control of two departments whose functions are largely identical, thereby causing duplication of labor, loss of time, and needless friction between the departments themselves. We maintain that this would be obviated by making the tenement house department a part of the building bureau in each of the boroughs; or else by making each entirely independent of the other, a single permit for the erection of each individual building being sufficient, the said building being subject to the inspection of one department only. Each borough, knowing its environment and needs best, should be able to preserve its autonomy and jurisdiction unfettered by the Manhattan Department, and subject to the control of its own president. At present the deputy's hands in each of the boroughs are tied, and his acts even to the minutest detail controlled by the central office.

As reinforcing our position on this question, it may be mentioned that under the present bicephalous arrangement it re-

quires seldom less than five weeks and sometimes two months to obtain the necessary permits for the erection of a tenement house, a week to ten days being the time required for the issuance of an ordinary building permit. It frequently happens that a month or more elapses before a permit for small alterations or repairs to a tenement is issued. No fee an architect can, with any regard for his reputation as a reasonable man, charge his client would compensate him for his expenditure of time and labor in undertaking this class of work.

In addition to the foregoing there are economic reasons, equally cogent, and such as may be supposed to appeal to a much larger section of the public than those directly interested in building operations. As respects needless duplication of expense, we have under the present arrangement the following officials employed to secure the enforcement of the law in the planning and erection of a tenement house:

TENEMENT HOUSE DEPARTMENT

Tenement house commissioner or deputy, plan clerk, filing clerk, plan examiner, public plan examiner, chief inspector, light and vent inspector, sanitary inspector, special inspector. Commissioner or superintendent and assistant, plan clerk, filing clerk, plan examiner, public plan examiner, chief construction inspector, chief sanitary inspector, construction inspector, sanitary inspector, iron inspector.

Numerous clerks, filing statistics, typewriters and bookkeepers, identical in both departments.

In view of such overlapping of functions throughout the departments it will readily be believed that Borough President Coler's estimate of a saving of not less than twenty per cent. in cost of administration, in case the two departments in question are consolidated, is a conservative one. This, on the basis of this year's appropriation for the two departments, would represent a saving of about \$300,000 to the taxpayers. It may be remarked in this connection that while the running expense of the two offices for 1908 is about the same as that of previous years, the amount of business put through the Brooklyn Building Bureau during the first half of the current year was considerably less than half that for the same period of 1906 or 1907.

We maintain that the method of making applications for permits at the Tenement House Department is cumbersome, needlessly complicated, and involves an amount of unnecessary labor, which is altogether incompatible with the due and expeditious transaction of business. On this head our Society addressed the following letter to Deputy Commissioner McKeown under date of January 5, 1907:

Dear Sir:—As general practicing architects of the Borough of Brooklyn we desire to lay before you the following just complaints and grievances appertaining to the transaction of business with the Tenement House Department; and in doing so would express the earnest hope that you will lend your assistance to bring about such changes of administration in the department as will afford speedy and effectual relief. Complaints are substantially as follows:

1. Undue delay in issuance of permits, which would indicate an insufficient staff of employees or a needlessly complicated system of procedure.
2. We are of opinion that the present forms of applications are too voluminous, containing needless repetitions and requiring answers to superfluous questions, unnecessary references to the law and self-evident facts supposed to be known by the applicant, and shown by the plans accompanying application papers.

When location of property is shown on plans and so stated once in the application, it should be sufficient.

A blue print copy of survey should be deemed sufficient if not marked on plans.

One statement as to owner, architect, builder, address, borough, city and county should suffice.

Questions not appertaining to the building in application should not be required to be answered in the negative.

We request that application blanks be remodeled, so that buildings for more than two families on a floor and more than four stories in height be classified separately.

At present needless duplication of measurements and markings on plans is insisted upon. It should suffice when horizontal and vertical measurements, with proper titles of rooms, halls and sanitary provisions for light and ventilation are indicated.

We complain of unreasonable interpretation of the law, as we know it to be intended, whereby we are compelled to institute court proceedings to secure rights.

When an architect asks for copy of violations, the same should be given to him as the owner's representative.

We wish to say in conclusion that we are actuated entirely by a spirit of fairness, and are earnest in our efforts and desire not to antagonize, but to co-operate with, the department for a better understanding and a square deal.

SOCIETY OF ARCHITECTS.

C. WHITLEY MULLIN, *Secretary*.

As the result of the above and subsequent communications to Mr. Butler, a new and simpler application form for permits was drafted by a committee of the Society, which was submitted to Mr. Butler and finally approved by him in the month of December last. We are still patiently waiting for its appearance from the office. An application blank for permit from each of the departments is herewith submitted for comparison.

The *modus operandi* of the Building Department is simplicity itself as compared with that of the Tenement House Department. In the former, any structural objections are noted in the papers, and the required corrections or explanations are made by the applicant, upon which the papers are approved and permit is issued usually on the following day. In the Tenement House Department, however, a typewritten list of objections is made out, 90 per cent. of which are of the most trivial character, based for the most part not upon the law, but upon regulations of the department, which are constantly being changed or added to. This list is mailed to the applicant. He in turn is required to answer each item in triplicate typewritten form, and if each answer does not conform exactly to the ideas of the examiner it is returned to applicant and numbered as an additional objection. This process consumes several days, and is frequently repeated several times. All "corrections" on plans are required to be made in red ink, and signed and dated in a stereotyped manner by the applicant, otherwise he will be again turned down like a mere school-boy. All this of course is "work" for the clerical force in the department, but it is simply waste of time and money for the owner and his architect, besides involving friction and an expenditure of nerve force which are extremely wearing to the man who has to submit to it.

A further important safeguard of the public is provided, in the case of the Building Bureau, by the establishment of a board of examiners, to whom questions may be referred on appeal from the commissioner. Our Society has for the past year been advocating the creation of a similar commission on appeal, to whom questions in dispute with the Tenement House Commissioner may be referred; but so far our efforts have proved abortive. We take this further opportunity of urging the establishment of such a commission in the interests of the profession and of the general public.

As to the law itself, which has quite passed its experimental stage, we would say that while fully recognizing the great benefit to the public from a sanitary point of view of its provisions as a whole, our seven years' practical experience of the working of the act has proved it to be defective in many respects. This is further made clear by the repeated attempts of the department to have amendments passed by the Legislature—attempts not invariably above criticism, either as to the mode of procedure adopted or the motives which have prompted them.

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ILLUSTRATIONS:

The Work of Messrs. Albro & Lindeberg, Architects
(10 pages).

OF the almost universal interest felt in the art of building we have ample and convincing evidence. The erection of a new building of any character is ordinarily a matter of such public concern, especially in the smaller centres, that a goodly number of spectators and critics are in constant attendance during every stage of the operation. The comments made and opinions expressed are often of a nature and quality to occasion not only extreme annoyance to those in charge, but even in some instances to constitute positive interference. The reason for this probably lies in the fact that general knowledge in this field has not kept pace with general interest, but as time goes on knowledge will be acquired and with it appreciation. The present condition of affairs involving general interest in architecture has not always been evident, and we consider its existence at this time a most encouraging and hopeful indication of the future. As an example of this feeling might be noted the small house owner. Where, a few years since, the average inhabitant of the smaller city or town was content to build his dwelling in accordance with the plan and suggestions of the village carpenter, having regard only for economy and utility, he now demands to know what has been done elsewhere, and employs an architect not only to assist him in securing maximum efficiency of plan, but also to insure the possession of some architectural and artistic qualities in his building. That these things which were formerly considered by them of no importance do now concern the people

would appear to be the strongest possible evidence of our educational advancement and quickening artistic sense.

INCIDENTALLY, the increasing interest in art and architecture, with its inevitable results of greater knowledge and appreciation by the masses, will immeasurably extend and broaden the architect's field of usefulness. Not only will he be employed in the erection of the major structures as of old, but gradually and in response to an insistent demand will he number among his commissions many of the enterprises which have heretofore been undertaken after some "stock" design, the product of a speculative plan factory. Moreover, it is only within recent years that general recognition has been given the value of architectural service in connection with those problems and structures formerly considered as belonging wholly to the engineer's province. As a result the field has been extended in another and most important direction.

IF architects will consider the progress made by them as a body in this country during the past twenty years, and compare not only the standing of the profession in public opinion then and now, but also the total amount of architectural service rendered a score of years ago with that demanded under normal conditions at present, they will hardly be inclined to accept the gloomy and pessimistic view of the future expressed by some of our contemporaries. Perhaps we should all be moved to a high pitch of excitement by the announcement that the profession is becoming sadly overcrowded, but we scarcely expect any one who pauses and ponders a little to be so moved. The prediction that as a consequence of this oversupply of talent, and the deplorable state of business in general, and lack of appreciation of art in particular, misery and starvation is the inevitable fate awaiting numberless deserving, but superfluous members of the profession, would doubtless be more dismaying if evidences to the contrary were not so patent.

AS a consequence of the National Conservation Commission requiring the information to complete its inventory of the country's natural resources the first comprehensive effort to ascertain with reasonable accuracy the amount of standing timber in the United States is now being made. Statements purporting to give this information in part have not been entirely lacking in the past, but founded as they were on partial estimates and incomplete data they very naturally were viewed with some distrust. That our forests are rapidly becoming denuded by the demands of commerce and the appalling waste occasioned by fire there is of course no question, but as to the time which will elapse before they will be entirely exhausted much difference of opinion has apparently existed. Since the report of the Commission will be submitted to the President the first of next year, we will doubtless soon be in a position to estimate with some degree of accuracy the length of time our lumber supply will last, based on the present rates of consumption and growth. The same length of time would seem to be indicated in which a general substitute for wood must necessarily be produced, and upon the character of this coming material the architecture of the future depends in no small degree.

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No. 1713.



OLD CUSTOM HOUSE.

WALL STREET, NEW YORK

The New Building for the National City Bank

BY LYNDON P. SMITH

WHEN, after more than sixty years of occupancy, the United States Government decided to abandon its Custom House on Wall Street, New York, for a new and more spacious building, it selected a site on Manhattan Island, down on the Bowling Green, at almost the southern extremity of the city.

Far back in the middle of the seventeenth century, it was here the Dutch burghers, the early settlers of the city, were wont to walk about and recreate themselves. Here the stolid, older people sat during the long summer evenings and watched the younger at their games of bowls. On the west in plain sight the North River, and on the east the East River, and where their streams united and flowed through the upper and lower bays, they reached the broad Atlantic, the great avenue of commerce between this country and Europe. Probably no sentiment was attached to the selection of this site, but the use of this location by the Government is none the less an appropriate one.

Here on the Bowling Green in later years the well-to-do erected characteristic Dutch colonial houses, whose form remained (although they long had ceased to be used as dwellings) and can be well remembered by the older residents of the city.

Under the wise provisions of the Tarsney Act, the plans for the new Custom House were secured by well regulated competition, and Mr. Cass Gilbert, the successful architect, has erected a building which is one of the prominent architectural features of New York.

But the old Custom House, abandoned after so many years of usefulness, had become a landmark. Its classic façade, begrimed by the smoke and dust of many years, stood a monument to its departed greatness. Through its grim portals had passed the shipmasters of three generations, who journeyed there to clear their vessels for all the ports of the world, and to set down in figures the value of the merchandise cleared over its counters would be to state a sum that is beyond the human mind

to comprehend. The older residents of New York who had seen one by one the landmarks south of Canal Street disappear, expected when it was learned that the property had been purchased from the Government by the National City Bank that soon the old custom house would be a memory, and had prepared themselves to see a busy lot of laborers razing these old walls to make way for a modern skyscraper.

It was with much satisfaction they learned that the directors of the National City Bank had entrusted to Messrs. McKim, Mead & White the work of planning for them a banking building that would retain as much as was possible of the old building consistent with present day requirements. For the patriotic citizen who desires to keep as far as may be these old landmarks, this was a fortunate combination of architect and client.

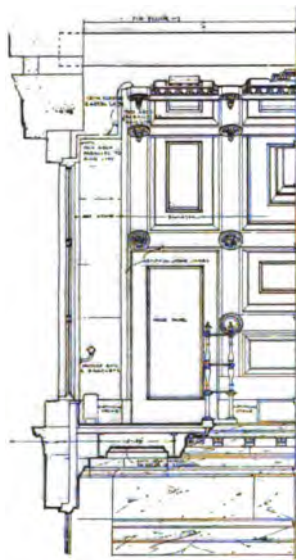
Here in the center of New York's financial activity will be the future home of the City Bank. Its surround-

The design of the capitals of these columns has been changed from Ionic to Corinthian. The other three façades are treated as pilasters with granite in between, in the same manner as the original building.

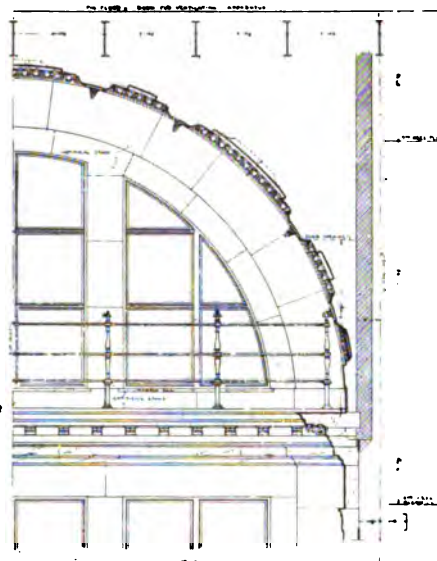
Back of the new portion the treatment is of metal, the columns being free-standing. By this means additional space is gained, as in the stories below the recessing of the portico occupied some of this room.

Above, the wall extends to the column line and is comparatively plain. Viewed from the street, the projecting cornice marks the terminating feature.

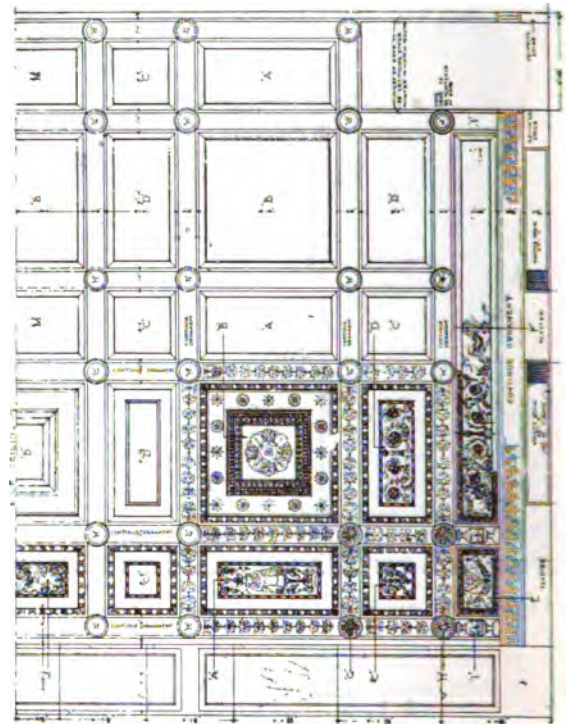
Reference to the plan will show the irregular shape of the site. The principal, or Wall Street façade, is approximately the same length as that on Exchange Place, or about one hundred and ninety-seven feet. The Hanover Street frontage is about one hundred and forty feet, while on William Street it is one hundred and seventy-one feet.



LONGITUDINAL SECTION
THROUGH
WEST END OF VAULT



CROSS SECTION
THROUGH VAULT



DEVELOPED PLAN OF CEILING

DETAILS

NATIONAL CITY BANK BUILDING

ings and the apparent age of its building suggesting in a measure that of "the old lady of Threadneedle Street," in London, or "the Bank," as it is generally called.

To convert this building to its new purpose it was necessary to remove the entire interior. Of the exterior all was retained that was possible. To emphasize the axial lines of the banking room, arched openings have been made, adding to the light efficiency and to the dignity of the design as well. While at various places it has been necessary to replace some of the granite the new material matches as closely as possible the older stones and will be in harmony.

The original cornice line rises about sixty-two feet above the street, and the additional height required for the new portion to the final cornice is about as much more.

The new design is carried up on the Wall Street side, in bays some fourteen feet wide between three stories of columns, which are three feet nine inches in diameter.

This lack of regularity in size is not noticeable as the scale of the structure is so generous.

Owing to its close environment it is not possible to view any part of the building, except the Wall Street front, from any great distance.

The main banking room rises to a height of about seventy feet to the domed central light. It is cruciform in shape, its two dimensions being the length and breadth of the building on its two axes.

The great vault occupies the center of this room. Grouped about this vault is the clerical force, and beyond that the public space.

Officers' rooms are conveniently grouped on the Hanover Street side.

Close to the Wall and William Streets sides, are the elevators. This arrangement in no way interferes with the effectiveness of the banking room.

The interior harmonizes in its treatment with the exterior. Rising from the main floor are columns of

gray toned marble, above this the finish is of artificial stone of similar tones.

The plan of the various floors can be readily learned from the illustrations presented, and show by their provision for locker space, etc., the magnitude of the operations of this institution and the large force of employees necessary.

Various executive departments of the bank are placed on the three mezzanine floors.

The fifth story, or roof house, presents some novel features, and is completely arranged and equipped for the comfort of the banking force.

It has two large dining-rooms: one for men and one for women. There is also a special dining-room for officers.

Kitchens, serving rooms, store rooms and a laundry are also located on this floor.

To provide for the additional loads imposed on the foundation, piling was driven as close to the old walls as possible. No caissons were used.

The completed building will be viewed with satisfaction by every New Yorker. It has been skilfully transformed to meet the requirements of its new purpose, preserving all the necessary portions of a monumental structure, which will stand as a tribute to the skill that originally erected it and the genius of the architects who preserved it.

Ruins They Would Rebuild

Project to Restore an Ancient Bath *

THREE years hence, in 1911, it is intended to celebrate the fiftieth anniversary of the proclamation of Rome as the capital of united Italy. An industrial exhibition is to be held at Turin, an artistic exhibition at Rome.

Both towns will be illuminated and decorated, there will be banquets and patriotic celebrations in each, speeches, fireworks and processions of veterans and red-shirted followers of Garibaldi. Bands will play in the public squares, and wreaths will be placed on the tombs of Victor Emmanuel II and Humbert I at the Pantheon, and 101 guns will be fired from the battery at Monte Mario, overlooking the Vatican, while the historic bell of the Capitol will ring the whole day through.

There are several projects, all more or less worthy, but none very practical, of erecting some lasting memorial that will serve to recall the date of future generations. A reconstruction of some ancient Roman monument seems to appeal most to Italian minds, as this would connect the present with the remote past, modern Rome with ancient Rome. Hence, it has been proposed to rebuild the Baths of Caracalla or the Ara Pacis Augustæ, the votive altar offered to Peace and erected in honor of Augustus, or else the Circus Maximus, and convert it into a national stadium.

The first two projects seem to have been abandoned as impossible of being realized. The Baths of Caracalla, the largest mass of ruins in Rome, consisting of brick walls and decayed mosaic pavements, stripped of marble, bronze and all other traces of their past splendor and glory, their gardens, theaters, porticos and schools all gone, their waters dry, their immense halls empty and roofless, are destined to remain in ruins, as evidence



SITE OF THE CIRCUS MAXIMUS.

of the decline of Rome. To reconstruct them in wood and painted canvas in imitation of Egyptian granite and precious Numidian green marble, would be a profanation; to rebuild them in the space of three years would be utterly impossible.

The reconstruction of the Ara Pacis, one of the most beautiful productions of the golden age and dedicated by the Roman Senate on January 30 of the year 13 B. C., is equally impossible. This monument was discovered in the second quarter of the sixteenth century, and almost all the fragments found were dispersed in Rome and subsequently purchased by the French Government. With the exception of a few pieces now in Florence the greater portion of the materials that composed it are in the Louvre and the Vatican museums, from which for obvious reasons it is impossible to obtain them in order to attempt a reconstruction.

There remains the project concerning the rebuilding of the Circus Maximus. The circus rose in the valley between the Palatine and Aventine hills, originally called Vallis Murcia from an altar to the Dea Murcia or Venus, so called after the myrtle trees which abounded on the spot.

In a long rectangular space between the two hills the followers of Romulus, the founder of Rome, held their games; in fact, then it was known as the *campus ubi ludunt* and was chiefly used for chariot races. Tarquinius Priscus provided the open space with wooden benches and enclosed within them the altar of the god Consus, an ancient Roman divinity supposed to protect land and agriculture, in whose honor special festivals consisting of chariot and horse races called Consualia were held three times a year. It is stated that the Consualia were instituted by Romulus and that the rape of the Sabines happened during the celebration of these games.

The altar, or ara maxima, supposed to have been originally founded by Evander or Hercules, was also included within the circus. According to Livy, the circus was repaired during the years 327 and 174 B. C., but the circular benches to accommodate the spectators remained of wood until the time of Julius Cæsar, who had them built of stone.

Its shape was that of an oblong of 730 yards, ending to the eastward in a hemicycle and surrounded by three tiers of seats termed collectively *cavæ*. In the center of the area ran a low platform called the *spina*, or thorn, at each end of which were the *metæ* or goals.

The object of the *spina* was to divide the chariots, which ran around it. Between the goals and on the *spina* were placed the obelisk of the Sun or Apollo,

* By courtesy of the New York Sun and Modern Sanitation.



RUINS OF THE BATHS OF CARACALLA

which the Emperor Augustus brought from Egypt and which Pope Sixtus V erected in the Piazza del Popolo in 1589; the obelisk of the Moon, dating back to 1550 B. C. and erected in the circus by the Emperor Constantinus and now in the Piazza of the Lateran; the columns supporting the seven ova, that is, egg-shaped balls, which serve to mark each course round the spina of the race, which consisted of seven times round; shrines to the principal gods and goddesses, columns of Victory, and dolphins in honor of Neptune. At the western extremity of the circus were the stables for the horses and chariots called Carceres.

Agrippa adorned the circus and so did the Emperors Augustus and Vespasian, who repaired it after the fire of Nero. Trajan not only embellished the existing building but enlarged it as well. Later emperors, Philip, Constantine and Constantius, still further enlarged it, until in the sixth century it could hold 385,000 spectators.

Originally, when all Romans were equal, there was no distinction in the seats, which ran like steps about the area. Tarquinius divided them into thirty equal spaces, which he assigned each to a curia, and Augustus had the seats arranged in separate tiers, which were occupied according to the rank of the spectators, by senators, military tribunes, married plebeians, unmarried girls, slaves, etc.

The Emperor's box, or pulvinar, was situated at one end of the circus, and it was built in rare marbles, ornamented with statues and decorated with frescoes. Under his reign, besides chariot races, wild beasts were introduced in the circus, and it is said that 3,500 elephants on one occasion were employed in one single performance.

Generally, chariot races were the characteristic sport of the circus. The charioteers first offered sacrifices to Consus that he might avert accidents and protect them in case of an upset, and then under the direction of the ædiles the races began and often lasted from daylight to sunset. The ædiles defrayed all expenses connected with the races, and so great was their cost that it is said Cæsar was obliged to sell his Tiburtine villa in order to pay for the games given during his ædileship.

The factions of the circus wore different colors and typified the four seasons. Many inscriptions discovered in the neighborhood of the circus commemorate victorious charioteers. Each faction of charioteers had

independent barracks, built with great magnificence and ornamented with works of art. Adjoining the barracks was a field, called the trigarium, for the breaking in and training of horses.

The four factions acquired in time a legal establishment and a mysterious origin and the fanciful colors of their liveries were derived from the various appearances of nature in the four seasons of the year—the red dog star of summer, the white snows of winter, the deep blue shades of autumn and the cheerful verdure of spring. Their respective victories announced either a plentiful harvest or a season of prosperous navigation.

The races were repeated twenty-five times during a day, four chariots ran each time and a hundred contributed in the same day to the pomp of the circus. A crown of leaves was the reward of the victor, but the profits of the favorite charioteer exceeded those of a successful advocate.

The arena of the circus during the games and races was covered with "precious dust." According to Pliny, under Nero borax powder was spread on it, and to this was added a certain pulverized specular stone, which gave the arena a silvery appearance. Under Caligula the pavement of the circus was painted over in yellow and varnished to resemble gold.

The circus, like other public Roman buildings, suffered several times from fires. It seems to have been entirely destroyed in the year 723 of Rome. Later, under Tiberius, a portion of it was burned, and still later the fire of Nero damaged it considerably.

Under Antonius Pius one of its walls collapsed and buried 1,112 persons under its ruins, while a similar disaster happened under Diocletian and Massiminian, when fully 13,000 spectators lost their lives. Still, after every calamity the circus was carefully repaired, and it remained in use until the sixth century.

Hardly anything except the ground plan of the most extensive building of ancient Rome has been left to-day, and even this can be identified only with considerable difficulty. The Valley of Murcia, shorn of its laurel, is now encumbered with gas works which pour forth volumes of black smoke. The Palatine still overlooks it, crested with the ruins of the palaces of the Cæsars, while the Aventine is occupied by the Jewish cemetery.

Even supposing that the Circus Maximus could hold only 15,000 spectators, the marble or stone benches, which were made accessible by an elaborate system of stairways, and on which they sat, would have required more than 250,000 feet of masonry. Not a fragment has



FRAGMENT FROM THE ARA PACIS, REPRESENTING A PROCESSION

come down to us, and we are in ignorance as to the way in which so great a mass of solid material has disappeared.

The search for marble by the lime-burners, which began with the decline of the Roman Empire, increased in the Middle Ages, and waxed still greater during the Renaissance, may probably account for this wholesale disappearance. In fact, the officials not only tolerated this search, but claimed a part of the profits for themselves. It is likely that the Circus Maximus perished partly to build modern churches and palaces and partly to supply the Roman limekilns. Its last vestiges were destroyed in the time of Paul V.

The project of Sig. Bruto Amante, indorsed by Prof. Boni, consists in the expropriation of the site where the circus stood, in the removal of all the buildings that now encumber it, during the course of which work it is hoped that some discovery of its foundations will come to light, and in the rebuilding in brick of the walls that once surrounded it.

The benches for the spectators will be of wood and all architectural ornamentation and decoration will be abolished. In other words, the enclosure, cleared and leveled, will be surrounded by a brick wall and fitted with wooden benches.

If this is done, and it is very doubtful whether it will be, the Circus Maximus of old Rome will be changed into a national stadium, where instead of the hundred chariots racing around the spina and watched by a bright crowd of senators, vestals, legionaries and plebeians, while the priests offered sacrifices and incense to the gods and goddesses whose shrines adorned the spina, a couple of hundred Italian boys in white knickerbockers will swing dumbbells and Indian clubs and play indifferent games of football to the strains of a military band in the presence of a Roman holiday crowd and a score of officials in frock coats and top hats. Will such a future be an improvement on the present?

Recent Discoveries in Crete

Dr. A. J. Evans describes in an article in the *London Times* further discoveries made during the past few months at Knossos, including the unearthing of a smaller palace adjoining the great one, in which have been found several interesting relics, indicating that the building dates back to the 17th century B. C. This lesser palace has proved to be of extraordinary dimensions, and, though incompletely excavated at one point, occupies an area of over 9,400 square feet, with a frontage of more than 114 feet. There were within it no less than four separate stone staircases, one of which, in addition to the two lower flights, showed remains of steps fallen from above, proving the existence of at least two stories. The relics found within the building show that its foundation dates from the close of the Middle, or the very beginning of the Late Minoan Age—i. e., from about the 17th century before our era. A perforated scalstone was found here of a unique character, bearing an inscription in the earlier class of linear characters on two faces. Among the vases brought out, one with a high spout represented quite a new type of painted vessel, displaying on both side papyrus groups in relief suspended from triple knots with fish between them. Dr. Evans found remains of a painted vessel, or "rhyton," in the

form of a bull's head, with a small perforation to the mouth, as if it had been used for libations, suggesting the vicinity of a domestic shrine earlier than that containing the fetishes. This expectation was speedily confirmed by the finding, hard by, of a chamber with two stone pillars of a kind so often associated with ritual remains in the Cretan buildings, and in the shaft of a contiguous drain two further cult objects, apparently derived from a chamber above, of which the "pillar room" must have formed a kind of crypt. One of these was the remains of a stepped base of steatite, provided with a socket above—in other words, the typical base for the shaft of one of the sacred double axes of the Cretan sanctuaries. The other object, the greater part of which was preserved, was a vessel of the same black steatite in the shape of a bull's head, representing a "rhyton," for ritual usage, like the clay example already discovered, but of far more elaborate workmanship. The modeling of the head and curly hair is beautifully executed. The nostrils are inlaid with shell, like that out of which cameos are made, and the one eye which was perfectly preserved was cut out of a piece of rock crystal, the pupil and iris being indicated by means of colors applied to the lower face of the crystal, which had been hollowed out. The horns, which seem to have been of wood, have perished, but some remains of gold foil found with the object, evidently belonged to their original covering. The artist who had wrought this beautiful work had engraved on the back of the neck a kind of signature or personal mark in the shape of a miniature engraving of a bull's head facing.

In the Palace area proper, the corridor on the southern front, the first section of which was discovered last year, has been traced westward to a point where, at the close of the early period of the Palace history, it was deliberately cut into to afford additional room for a building on a lower terrace level immediately to the south. The space left between the well-preserved back wall of this house and the cutting beneath the inner line of corridor had been largely choked with massive blocks from this front of the Palace, probably at the time of its final catastrophe. Here, too, were numerous other relics hurled by the same overthrow from the rooms and repositories of this part of the building. Fragmentary as many of them are, they make up a kind of epitome of the whole later civilization of the Minoan lords. They include a bronze votive figure and the fragments of a series of large jars with designs of sacred double-axes and altar horns, painted vases in the later "Palace style," and heaps of painted stucco from the walls, with samples of many brilliant designs. One of the best-preserved pieces shows the profile of the face of a youth, in front of which is seen the richly-embroidered loin-cloth and girdle of another at a somewhat higher level. Among the minor relics found was a gold-mounted intaglio of lapis-lazuli, exhibiting a man behind a lion. There were fragments of crystal bowls and boxes, and the Renaissance art of "back-work" on crystal was represented by a plaque with traces of a miniature design of a building with isodomic masonry. A curious discovery was a rough stone box containing samples of tesserae for mosaic work, each of a different material—rock crystal of two kinds, clear and smoked, amethyst, beryl, lapis-lazuli, copper, and pure gold. Among the ivory relics is a piece of a plaque, with an undercut relief, exhibiting the forepart of a griffin seizing a bull.

The contiguous building, for which this cutting into the original south front of the Palace was made at the close of the Middle Minoan period, may well have been an official residence. The basement rooms, one of which had a row of three central stone pillars, displayed a peculiarity exemplified by other external houses. Where in the Palace itself there were always wooden posts were here stone door-jambs, perhaps a symptom of incipient scarcity of timber. Under one of the three staircases of this house was found a nest of silver bowls and a silver jug, and one of its cellars contained a deposit of bronze arms and implements, including three saws. In another building east of this was found an important hoard of bronzes. These consisted of a magnificent tall ewer, a large basin, three tripod cauldrons, and a bronze saw nearly six feet in height, probably used for cutting stone.

The new extension of the Palace to the southwest, the existence of which was discovered last year, has now been explored, and seems chiefly to consist of another large official residence. But the problem of the deep rock-cut vault under the southern porch has not yet received its final solution. Its great antiquity is ascertained by the fact that the earliest Palace foundations are carried deep down into it, and the latest remains of its filling only reach to the threshold of the Middle Minoan Age. Hence it is reasonable to hope that it may eventually throw new light on the Early Minoan culture that immediately precedes the great age of the Cretan Palaces.

There was discovered, in a neighboring area of the south front, a well-defined house floor (lying below another of Middle Minoan date), containing a rich store of pottery belonging to the Early Minoan class. It is the first time that we have properly represented at Knossos this preliminary phase of the great Minoan culture, the importance of which has been receiving signal illustration from the discoveries made this season in the east of the island by the American explorer, Mr. Seager. In the small island, once probably peninsula, of Mochlos he has opened a series of ossuary tombs with rich contents, all belonging to this early period. Perhaps the most surprising were a series of small gold objects, including fine chains, artificial leaves and flowers, and gold bands with engraved and repoussé eyes for the protective blindfolding of the dead. Another remarkable feature was the abundant series of miniature stone vases, betraying the strong influence of protodynastic Egyptian models. Near, and apparently belonging to the same stratum as that containing the Early Minoan vases referred to on the south border of the Palace, was found a fragment of a fine diorite bowl of Egyptian fabric and material, which closely resembles a diorite bowl found in the tomb of King Sneferu.—*The Building News*.

In the Field of Art

Art in America is in dire stress these days. Not only is it assailed by members of the profession in this country, a point of attack least expected, but we have the scathing criticism of a French architect who sees nothing good and everything to condemn.

Mr. Gutzom Borglum, the well-known sculptor, whose figures of the archangels, portrayed as females, provoked so much criticism from the clergy of the Cathedral of

St. John the Divine, has written an article, appearing in the current number of the *Craftsman*, in which he sets up the contention that American artists, painters, sculptors and architects are lacking in reverence, sincerity and individuality. Mr. Borglum's strictures on American art are summarized in an article in the *New York Times* as follows:

"We have 'cribbed' every scroll and form we build; our architects and artists annually 'beat it' to Europe to gather ideas to restock their idealess plants at home."

"The common spirit in sculpture and architecture in America is at the top notch of mediocrity."

"I do not know of one work of Saint-Gaudens that was not commissioned, that is, that was not suggested to him and produced for another. Saint-Gaudens, master that he was, was a master workman, not a creator."

"New York is filled with honest men who dodge every opportunity nature or events toss them to better or make more beautiful their immediate hour or place."

"Puritanism has made us selfish, self-centered hypocrites for so long that sincerity and reverence for what is natural and wholesome in our impulse has been fairly bred out of us."

"You could no more take liberties with Rodin's St. John or his head of Balzac than you could picture Angelo's Moses munching on an ear of green corn or the Venus de Milo in hoop skirts. Can you not, however, count many statues in New York, which, through their mediocre commonplaces, would be quite at home as a soup advertisement?"

"The end and aim of the United States is the production of the 'machine'—the end and aim of the 'machine' is that nothing shall live not 'machine-made.'"

Mr. Borglum's position as a sculptor, probably entitles him to express an opinion, but it may perhaps be objected to by his brother sculptors that it is assuming too much to insist on his opinions as statements of facts. Certain it is that the body of sculptors in America will object to the allusion to the work of the dead Saint-Gaudens. If they agree with his statement we feel sure they will not endorse the bad taste that gives it publicity, just at this time.

As to Mr. Borglum's criticism of Architects and their work in America, we are inclined to the belief that the remarks would carry greater weight if they came from some source entitled to speak with at least a measure of authority.

The *Times* has interviewed some painters of note, and also some prominent sculptors. If these interviews reflect the opinion of the painters and sculptors, we believe Mr. Borglum will experience some measure of uneasiness in entering a field of discussion wherein he seems certain of defeat.

The second instance of adverse criticism, and in this case coming from above, is that M. Augustin Rey, Architect, who hails from Paris. He is quoted as saying:

"New York City from an architectural point of view is so absolutely ridiculous, unreasonable, and most stupid as to make it appear, in fact, as though planned by a lunatic."

Although but a short time in America this gentleman feels that he has mastered all our economic conditions, and in an interview that wastes a column of space in the *Times* reads us a sharp lesson on our shortcomings, and complacently points out the remedies to be applied.

Certainly M. Rey's tirade will not be taken seriously, and we mention the circumstance merely as an instance of the foreigner visiting America, endeavoring to work up some cheap reputation for consumption when he returns to his native shores.

This general tendency of foreigners to criticize our architecture was commented on at some length in the columns of the *AMERICAN ARCHITECT* of September 30th last.

Recent acquisitions by the Metropolitan Museum of Art in New York are important and of value, but none greater than the painting of the Madonna and Child by Bellini, who is not otherwise represented in the Museum. By the time Bellini entered upon his career, the taste of the Renaissance for profane subjects in art had arisen. Bellini's strong religious nature refused to be influenced by the spirit of his time, and his work shows all the devoutness of a feeling of reverence for his subject.

Bellini lived from 1430 to 1516, or 86 years. The picture acquired by the Museum must represent this master at the zenith of his powers, and it affords the student in art an opportunity to study a technique and arrangement of color in sharp contrast to that of the extant work of this interesting period of art.

Canadian Architects in Session at Ottawa

The Architectural Institute of Canada held its first annual meeting in Ottawa early in October with a representative gathering from all parts of the Dominion. Ottawa is to be the headquarters of the new organization and Mayor Scott welcomed the delegates to the city. The members are divided into four classes: Honorary members, distinguished men in architecture and science, corresponding members, men who are prominent architects, but who do not reside in Canada; fellows or regular members, architects in Canada and associates, any men engaged for two years in the profession or who have here passed the qualifying examinations.

The most important subject dealt with at the meeting was a code of professional ethics. The code adopted is as follows:

No member shall accept direct or indirect compensation for services rendered in the practice of his profession other than the fees received from his client. No member shall enter into partnership, in any form or degree, with any builder or contractor in any building operation. A member having any ownership in any building material, device or invention, proposed to be used on work for which he is architect, shall inform his employer of the fact of such ownership. No member shall be a party to a building contract except as owner. No member shall guarantee an estimate or personal bond. No member shall attempt to supplant another architect after definite steps have been taken towards his employment. No member shall advertise in any publication in any other way than by a notice giving name, address, profession and office hours. No member shall criticize in the public prints the professional work or conduct of another architect, except over his own name. No member shall furnish designs in competition for private work, unless an advisor satisfactory to the competitors is employed to draw up the conditions and assist in the award. No members shall submit drawings, except as an original contributor in any duly instituted

competition or attempt to secure any work for which such a competition remains undecided.

It was left to the council to make the schedule of charges as nearly like those in the Ontario association as possible. This action was taken because it was thought better to have no conflict in this regard with other organizations. The complete list of by-laws was passed. It provides for the formation of chapters any place where there are four or more architects desirous of such a formation. It decided to hold an annual meeting each year, and semi-annual and special meetings if required.

The institute dealt with a letter from the American Institute, which asked that a closer relationship be established between the Canadian and American organizations.

The officers elected were: President, Mr. A. F. Dunlop, Montreal; vice-presidents, Messrs. Maurice Perrault of Montreal, F. S. Baker, F.R.I.B.A., of Toronto, and S. Hooper of Winnipeg; secretary, Mr. Alcide Chausse of Montreal; treasurer, Mr. J. W. H. Watts, Montreal, and a council of fourteen men.

Matters Relating to Competitions

Under the above title the Board of Directors of the American Institute of Architects has printed in pamphlet form extracts from the various reports on competitions from 1905 to 1907, inclusive.

This pamphlet has been carefully compiled, and is an official statement by the A. I. A. of their position on this important subject.

The principal reports of the committee are:

Essential requirements of competitions.

Some general notes on competitions, and on selection by examination of records of performance.

Method of procedure authorized by the A. I. A., where a competition is deemed necessary, is also included. This covers every detail of program, schedule of charges and form of competition contract, and also a very important clause as to the ethics of competitions.

While it appears unfortunate and perhaps a little unnecessary that this material should have been withheld from the profession for nearly a year after presentation its publication is of greatest interest and value even at this date, as the subject is one of perennial and general concern.

Discovery at Exeter Cathedral

An interesting discovery at Exeter Cathedral, parts of which are now undergoing repair, seems to point to the existence of an earlier building on the same site. Through a crack in the south tower, workmen have extracted a carved head, which is said to be of Egyptian origin. Some time between the eleventh and fifteenth centuries the head was used, with other rubble, for the purposes or filling up. The Norman towers, commenced in the eleventh century, are usually spoken of as the most ancient portion of the cathedral.—*Builders' Journal*.

The twenty-first annual exhibition of the Art Institute of Chicago was opened on the 20th of October.

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Recommendation of New York Code Revision Commission.

Attempt to Abolish Baltimore Architectural Commission.

ILLUSTRATIONS:

The National City Bank Building, New York, N. Y.
(8 pages).

Additional:

Chateau du Bois du Maine, Bagnoles de l'Orne, France.
Hotel Louis XIII, Abbeville, Normandy, France.

AFTER many months presumably spent in careful study and consideration, not only of the various aspects of the problem itself, but also of the numerous plans and suggestions submitted by others to limit or control the height of New York's future buildings, the Building Code Commission has finally transmitted its recommendation to the Board of Aldermen. The plan proposed by the Commission provides that the height of each future building shall be determined from the width of the street on which it faces, but shall not exceed 300 feet in any case except if the building faces a public square, in which event it may be carried to the height of 350 feet. Where streets are less than 45 feet wide buildings may not exceed 135 feet in height. Precisely what considerations have operated to cause the rejection of all plans suggested in favor of the one containing the above provisions is not apparent. Certainly the scheme proposed by Mr. Ernest Flagg some months ago, even though susceptible of some improvement, perhaps, appears immeasurably superior. Of course the experience of having a comprehensive, reasonable and efficient plan ignored or rejected and an arbitrary unskillful half-measure adopted in its stead, is not new to New York, and probably should not excite particular surprise. In this instance, however, we believe it will prove an attempt to walk in the middle of the road with the result of inviting missiles from both sides. Neither property interests nor the demands of

health and safety will be satisfied. It is hoped that public hearings will demonstrate to the Aldermanic Committee on Buildings that this matter, probably the most important of those to be considered in connection with the Revision of the Building Code, has not been disposed of with a conspicuous display of wisdom, and the consequent advisability of further examination and study before taking definite action.

WITH the greatest desire to do full justice to all, and a keen appreciation of those qualities which have made so many modern builders the indispensable allies of the profession, we are forced to the reluctant conclusion that as a class the small provincial, so-called "practical builders," to be found both retired and active in the minor centers of population, and even at times in cities approaching the first class in size and importance, have probably done as much to the detriment of Art and Architecture in this country as any other one agency. While instances have been not infrequent or unnoticed heretofore we are moved to these observations just at this time by the regrettable attempt reported to have been inspired, and largely supported by interests which readily fall into the classification last mentioned above, to abolish the City Architectural Commission of Baltimore. Of course the ignorant, uneducated class to be found in every city, great or small, has no conception of the duties, purposes or ideals of the Architect, and consequently is incapable of placing any value upon his work, but it is not ordinarily this class that opposes civic development along artistic lines or grumbles at the necessary expenditure of money to secure adequate and proper plans for fitting Municipal Buildings. In fact the members of this class seem, at least in a measure, to realize their own limitations. Not so with the average small "practical builder." In his case, as of old, a little knowledge proves dangerous. From some slight experience in the simpler operations of building and a degree of familiarity with working drawings gained by such experience, he leaps to the conclusion that there is nothing more to the art than lies within his ken. Starting from such conclusion it is not impossible to understand his feeling that the employment of an architect is a useless extravagance, and while the opinions of these "practical" men, especially when no longer in the ranks, would in themselves be of little consequence, it is a lamentable though incomprehensible fact that many otherwise intelligent and astute persons will give attention to their complaints and a degree of credence to their representations, as witness the present situation in Baltimore. But we are persuaded that the proportion of educated people who recognize at their true worth the services of architects and artists is too large to permit of taking the backward step proposed by the threatened action of the Baltimore Council. The value and importance of having due regard for æsthetic considerations are now generally admitted, and any change tending to detract from or in any way lower the character of architecture of future Municipal Buildings can never be justified on the score of economy, either fancied or real. That the matter should have serious consideration by any considerable or representative body of men indicates a deplorable lack of artistic appreciation which must be combatted and overcome, unless Baltimore is content to forfeit the place among progressive American cities which she would otherwise rightfully occupy.

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NOTES FROM EUROPE

By FRANCIS S. SWALES, ARCHITECT.

FROM a recent number of *The Builder* is culled the following, referring to trashy competitive designs:

"* * * the elevations can be discussed as they stand without any need of comparison. They are diligently symmetrical and of the sort to make one feel tired—tired of them one cannot help being, considering the innumerable schools of this type of design which have been run up all over the country during the past twenty years. One would have thought that a small seaside town like Hoylake (which contains one or two pleasant older buildings engulfed in a sea of modern trash) would have given an architect some idea of what was suitable."

Criticism is justified by such designs as are only too often successful in competitions as conducted in Great Britain and especially in that sort of competition to which the above quotation alludes—a competition in which the County Architect acted as Assessor (Judge) and only the winning design was pub-

licly exhibited. Judging from the illustrations which continually appear in the weekly architectural press of such "successful" designs, one is left to choose between the dull and dry and the eccentric and exaggerated. One is at no loss to account for such things in works of monumental pretensions and great extent, such as, for instance, the London County Hall, for which there could be found no adaptable precedent—nothing inspiring (since it was known that the design must be "aggressively English") upon which to base the composition—no great standard to be equalled or surpassed. But, as to the smaller public buildings, especially the schools, it is indeed surprising that with the almost unlimited heritage of beautiful examples from which to draw inspiration and a wealth of suggestion, they are not better.

It may be supposed that the evils attendant upon competitions, everywhere, are often so great as to make it impossible for the self-respecting architect to enter into them and it is very regrettable if some means cannot be found to enable public bodies



LAMBETH TOWN HALL

MESSRS. WARWICK & HALL, ARCHITECTS



SUCCESSFUL COMPETITIVE DESIGN FOR
BIRMINGHAM COUNCIL HOUSE

MESSRS. ASHLEY & NEWMAN
ARCHITECTS

to entrust to the ablest men at least some of their important buildings. France seems to have solved the problem, and perhaps a careful study of her methods might suggest a means by which it would be possible for England to entice Mr. Ernest George to design some of her schools or Mr. John Belcher to produce an interesting library or a bath house, or Mr. Norman Shaw to show us another public edifice as worthy of admiration as his famous buildings of Scotland Yard.

The Influence of Norman Shaw.—The mention of Mr. Shaw reminds us that although we retain the highest respect for his great abilities as displayed in his works, certainly at least his earlier works, it may be doubted whether his exceptional individuality in the treatment of his subjects has had an influence for better or for worse upon the younger generation of British architects. In some of his works, especially such as the house in Queen's Gate, he has combined, with that rare ability which belongs to the true artist alone, all sorts of motifs and details, drawing their inspiration from this or that period of architecture—now from France, then from England or Holland, again from Italy or Germany, but always welding them into a charming whole.

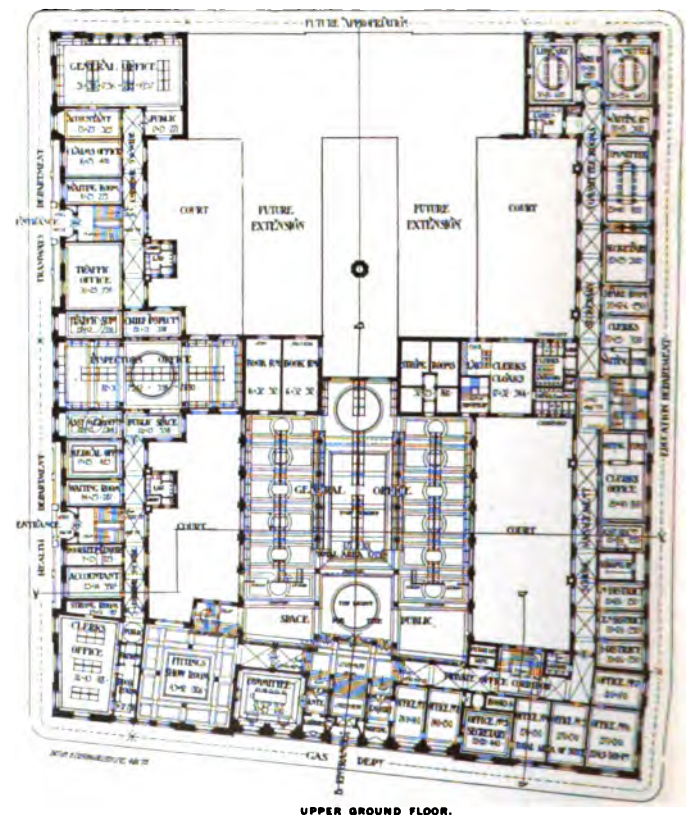
Mr. Shaw has thus created a "School," a school which considers the arch of a gigantic culvert a suitable *motif* for a dormer window to a Town Hall; and Hampton Court Palace—on stilts with a glorified railway station on top—a suitable composition for a furniture warehouse, a school which puts together all the features so skillfully composed by Mr. Shaw, with the discrimination of a Kansas cyclone.

The new *Patent and Designs Act* does not appear to be the "Good wind that blows nobody ill," for, aside from the burden it places upon, or alternately the injustice which it does to foreign patentees by confiscation of their rights, a correspondent to "The Builder" points out that "it should be borne in mind when appraising the value to the country of foreign firms purchasing land and factories, that, being the holders of monopolies, these firms are in a position to charge users of their products with the extra cost they thereby incur. Hence the benefits referred to apply not so much to the country as a whole as to land and factory owners."

Changes in Piccadilly.—During the past three or four years Piccadilly has been much changed by rebuilding a great part of it between Green Park and the

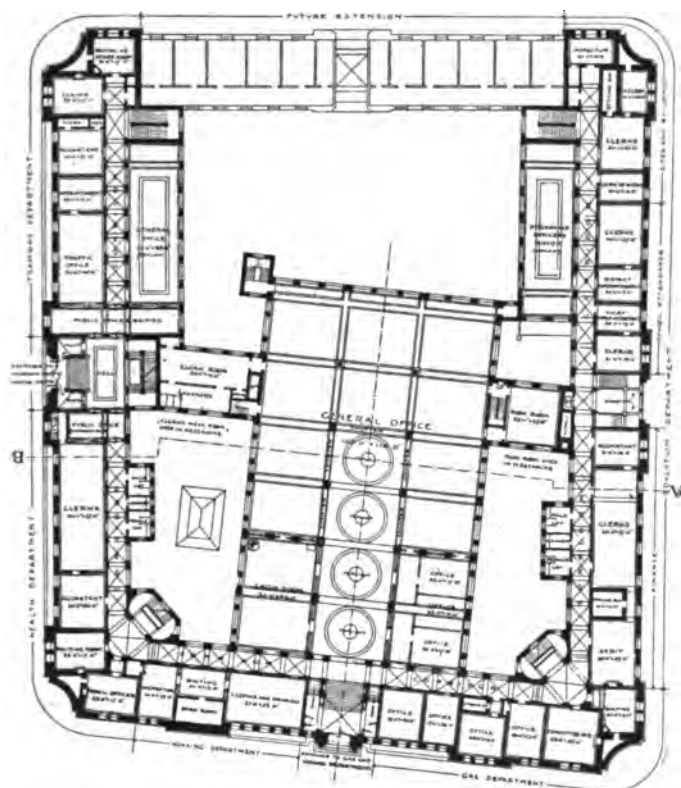
Circus, the most conspicuous changes being occasioned by the new Ritz and Piccadilly Hotels, the new buildings of the Royal and the Norwich-Union Insurance Companies and the row of new buildings adjoining the latter. There is also a new building at the corner of Old Bond street adjoining the comparatively new building formerly called the Albermarle Hotel, while opposite to Green Park, a number of new buildings have been erected, including a very noticeable and rather interesting "flat" building for Mr. Duveen, designed by Messrs. Colcutt & Hamp.

Some alterations are now being made to Nos. 125, 6 and 7 for the Cavalry Club, and it is reported that another story is to be added to the interesting old house known as "A"—Albany, formerly Piccadilly House. The Ritz Hotel and the Cavalry Club are the work of Messrs. Charles Newes of Paris and Mr. Arthur Davis of London—the first is, and the latter may be relied upon to be, a staid and dignified kind of modern French architecture. The Royal Insurance building is the work of Mr. John Belcher, A. R. A., is executed in Pentelic marble, stands at the corner of St. James Street and is expected ultimately to extend to Albermarle Street, on the opposite side of which, and extending to Green Park is the Ritz Hotel. The first portion is now nearing completion. As is usual with Mr. Belcher's work, the de-



PLAN
BIRMINGHAM COUNCIL HOUSE

MESSRS. ASHLEY & NEWMAN
ARCHITECTS



PLAN

MR. H. T. HARE, ARCHITECT

sign, while Renaissance in its details, is highly original, and a good amount of sculpture, executed, and probably detailed by sculptors of some *bona fide* pretensions to artistic ability. No other architect in England has been such a great patron of sculptors as Mr. Belcher, and, if we may judge from the fact that the sculptors usually do their best works under his direction, we may conclude that his ability as a critic in this path of art is not inconsiderable. The figures upon the present structure are the work of Mr. Bertram Mackennal, and possess merit above the average displayed at the academy. The spaces they occupy in the fourth story under the cornice are such as to render the task of the sculptor doubly difficult because the slightest deviation from a well-balanced line would be sure to create the sensation of falling. While this building contrasts greatly with the Ritz Hotel, and lacks the simple strength of the latter, it is none the less an ornament to London and a refined and clever design. Of the building at the opposite corner of St. James Street and Piccadilly for the Norwich Union Insurance Company, and those which adjoin it, the less said the better. We wonder were it not for the Building Acts, which are as kind to fools as God is to drunkards, whether these buildings would have been designed to stand up. At their best they are but the efforts of the kind of men who "overcrowd the profession" of architecture. The building at the corner of Bond Street, named "The Corner," is an elaborate and fussy affair by Messrs. Reid & McDonald, pupils of Mr. Ernest George,

who designed the adjoining building, formerly the Albemarle Hotel. From both we are entitled to expect, and we generally get much better work. But from architects who design the most agreeable of domestic buildings we often get the most unsatisfactory results in commercial and monumental structures. Coming to the Piccadilly Hotel, which is a huge affair extending from Piccadilly Place to Air Street and from Piccadilly back to the Regent Street Quadrant and Vine Street. Externally it is the work of Mr. Norman Shaw, R. A., and while not by any means the best work of that venerable gentleman, is picturesque in the good sense, strong and vigorous in its composition, original so far as the word goes, interesting—perhaps, in a measure, beautiful. It is crude in the scale, placing and relation of detail, though some of these, such as moldings and bits of carving, are good enough in themselves. It is the last new structure before reaching Piccadilly Circus, and it has an important front on "The Quadrant," which calls for more than ordinary notice because it is the design which has been approved by H. M. Office of Woods and Forests, which is the authority, and to which all new structures to be built in future in the Regent Street Quadrant must conform. When one thinks of some of the new *façades* in Piccadilly, or, worse still, some of those in Regent Street above the Quadrant and below Piccadilly Circus, this is a matter of rejoicing. But a study of the *motif* along the Quadrant is not so convincing. In fact we feel H. M. Office, etc., has made the better of a choice between two evils; for this front is sufficiently commonplace and dull. The shops in the two lower stories are by far the best part of the design, and, though they have been violently assailed by some of the other "architects" of the structure and their friends, are still the best shops in Regent Street so far as the elevation is concerned. It is the treatment above which we feel to be unfortunate. There seems to be no satisfactory solution of the problem of three stories behind an order. It must either pretend to be one (as can be accomplished by the use of a curtain-wall of metal) or two stories, the latter of which has long been done with some success in stone. The curtain-wall in the present instance is divided into three distinct stories, the middle one of which is lighted by a row of "bulls'-eyes," the upper and lower parts by triple windows, with segmental arches over each window unit—the mullions of the former do not center over those of the lower, which is for "variety's sake;" all of the glass surface is broken into very small panes, of which there is a different size for

COMPETITIVE DESIGN
BIRMINGHAM COUNCIL HOUSEMR. H. T. HARE
ARCHITECT



DETAIL
BIRMINGHAM COUNCIL HOUSE

MR. H. T. HARE
ARCHITECT

each story. The columns themselves are of the type so popular in England which resemble the engineer's bolt with a number of nuts threaded upon the lower part; the bases are coarse and flabby and the "caps" seem to have been modeled—at twelve times full size—for execution at three inches across the neck. The entablature is in scale, more or less, with the capitals, and has a bulging frieze ornamented—if the word may be used—with a kind of cartouche which has the bug-like characteristics of an *Arts and Crafts* brooch. The dormers in the roof do not center one over the other or over anything below. The whole is finished in a neat and workmanlike manner with chimneys—or should we say towers—some eight feet in least dimension, and *rusticated*! The fact that Mr. Shaw and his *confrères* seem to have been at loggerheads throughout the construction and the probability that the aged artist did not take much part in the detailing may account largely for many of the shortcomings of the design. The main proportions, such as the relation of the height of the order to that of the basement, of the width of the *avants-corps* to the same and their spacing with relation to the length of the colonnade are good; and, provided the Office of Woods and Forests does not insist upon a too literal continuation of the design—including what is bad with what is good—the completed Quadrant may become, in spite of its inauspicious beginning, one of the most important of London's monuments.

New Stores in Oxford Street and Vicinity.—Next to

"Warings" new premises, which, though a conspicuous building with much elaborate detail, constructed of good materials and not without merit in its own way, frankly, is not to our liking of the sense of fitness of things, has just been completed a building for Mappin & Webb by Mr. Belcher. It is not unlike the building, by the same architect, for the Royal Insurance Company in Piccadilly, though somewhat too meager in its proportions to be altogether as successful as the above-mentioned but later design, but, as compared with its ostentatious neighbor, is refined and appropriate. But even Messrs. Waring & Gillow's building must be acknowledged to be a considerable advance over the ordinary run of English commercial structures, however much it may seem inappropriate as a retail warehouse.

At the corner of Oxford Street and Duke Street, Mr. H. G. Selfridge, formerly of Chicago, is erecting a large department store. It is to be only five stories high (80 feet), but covers a very large ground area. It consists of a high ground story of simple piers, a three-story colonnade and one story in the high frieze of an over-sailing entablature. The treatment of a row of large, ionic, engaged-columns, running through three stories—the divisions being made in the large iron bays—promises to be effective. It is aggressively big in scale and entirely at odds with everything else in Oxford Street, a matter which is not altogether to be regretted because Oxford Street is one of the ugliest streets in the world, and everything that pertains to architecture has been until recently conspicuous by its absence. The Selfridge building will, no doubt, be the largest and perhaps also the finest store building in London, which statement commits one *really* much less than apparently. So far as architecture is concerned London has very few fine stores—none to compare with the best in Paris or New York—and these latter even the Selfridge building will certainly not surpass. One of the designs prepared by Messrs. D. H. Burnham & Co. was rather fine, Mr. Selfridge himself and more than one London architect, as well as the regulations of the London County Council—which latter require a shop to be split into a number of cellular compartments—have each had a hand in its development and played the part of the supernumerary cooks. The detail imitates, but does not quite come up to a copy of that of the *Grand Palais des Beaux-Arts*, Paris.

In Wigmore Street nearby, is another new dry goods shop, the work of Messrs. Wallace & Gibson, architects, which, up to the present quite outshines anything of its kind in the "West End." It is built of "Carrara ware" (a kind of dull glazed, light colored faience) and ornamented with columns of green marble. The design of the exterior is rather engaging, and as good at least as shops in London are likely to be. There is a brave show of colossal arches below and green marble columns, bronze balconies with enamelled coats of arms and a tower above.

New Town and County Halls.—The Town Hall in England is a favorite subject among architects. It is usual for the average competitor to endeavor to quite out-do himself in the production of exaggerated effects, *bizarre* features, ultra-original piecings together of scraps of detail from the pit into which good architects of all periods and places have cast such discredited for-

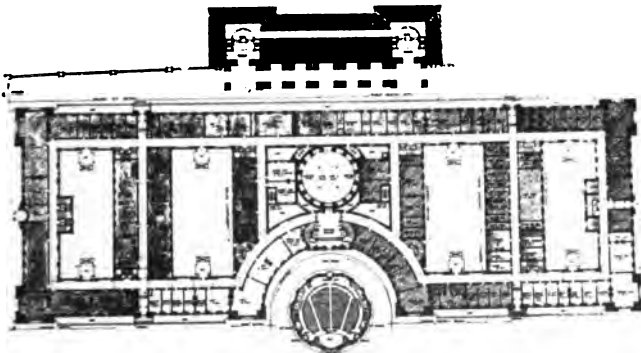


PROSPECTIVE VIEW, LONDON COUNTY HALL

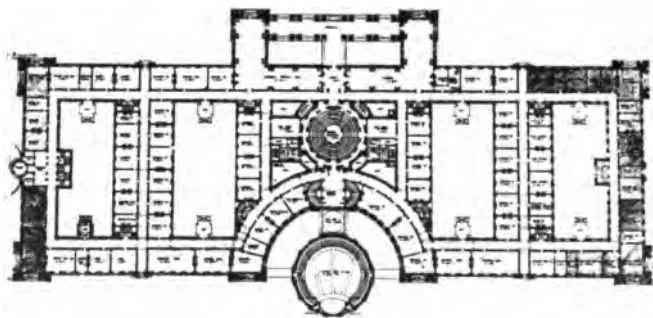
MR. RALPH KNOTT, ARCHITECT

mulæ as that which produces the column made up of little blocks alternately round and square, the broken and contorted curved pediments, arches with voussoirs which look like nothing so much as the blades of a paddle wheel from an old-fashioned ferryboat, etc., etc. Time was when this sort of thing was the only sort that would win a competition, and young architects were brought up to believe that eccentricity was the only merit in architecture, so far as public buildings were concerned, and the idea still greatly prevails. Fortunately of late it is not always the work of the *average* competitor that wins, but, frequently that of the ablest. Perhaps this fact is due largely to Good Fortune in the shape of a well-chosen assessor or jury; but the fact that in several recent competitions, strong, simple, and (for England) conservative work has been produced by the successful architects, suggests that a reaction is setting in against the extravagant type of building which for the past fifteen or twenty years has defaced the streets of every large town in Britain. In planning, too, the improvement has become quite as marked, if, indeed, not more so, especially in the smaller examples. But even in the competitions for the very large structures, such as the new hall for the London County Council, and the extension to the Birmingham Council Hall, the number of works of a dignified character could not fail to attract the notice of any observer of tendencies. There were, of course, many more of the passing type than the new in both cases. There

was the ever present mass of the commonplace and impossible, as indeed, occurs in every competition in any country whatever, but in the case of the London County Hall, the winning design, except for a few features—such as the ungainly arches in the attic story of the pavilions—errs if at all on the side of restraint and sobriety. Except, too, for absurd circular public hall which masks the main entrance and forces a large curved dent in the general wall-face, and also for too great economy in the matter of public entrance halls and main staircase, the plan is well-considered, direct and practical—which is exactly what the program—or “conditions” as it is termed over here—called for. Even finer in some respects, though doubtless also much more costly than Mr. Knott’s design, was that of Mr. Belcher, which was notably good in its simplicity of arrangement and monumental treatment of the internal approaches of the Council Hall, and the elevations to the river (except for two thin towers) and Westminster Bridge were quiet and reserved to a degree. It has been complained that the design was less original and imaginative than is usual with Mr. Belcher’s work, and that is so, but, if less brilliant, it was also more monumental, stronger and more vigorous than anything else he has done. It needed a dome—a large, full dome—such as the one Mr. Gilbert used on the Capitol at St. Paul—to dominate the whole, and it would have provided the London County Council with a home comparable with the best of any similar body in the world. Mr. Knott’s design won on



GROUND AND FIRST FLOOR PLANS



LONDON COUNTY HALL



THE CUSTOMS HOUSE, DUBLIN

JAMES GANDON, ARCHITECT

its merits, one of which certainly was judicious economy. The building has, roughly, the ground area of the United States Capitol, and is to be eight stories high. The cost was limited to about \$4,000,000 and worked out at about 25 cents per cubic foot, which, clearly, did not allow for much architectural elaboration. In the plan Mr. Knott saved—over the designs of any of his competitors—about 300 feet long of outside wall by placing offices at each side of two of the transverse corridors. He also effected a saving over other of the designs by placing two stories in a slate roof, thus saving a stone-faced wall which would measure about 20 feet high and third of a mile in length. Of the designs which seemed to be out of the running on the ground of expense, the plans of Mr. William Haywood and George Washington Browne were conspicuously strong and well worked out. Two other excellent plans were those of Messrs. Jammett & Macombie and Mountford & Clapman, both of which were accompanied by modest, if not particularly brilliant, elevations. The most thoroughly artistic design—though somewhat archæological, and besides disregarded both the questions of cost and light—was that by Mr. Lutyens, who included two domes and three monumental slips from the river as part of his scheme. Mr. George proposed a design in brick, somewhat too domestic and institutional rather than public. His river elevation was probably the best composition submitted in the competition, while his elevations throughout showed that remarkable charm which Mr. George, of living English architects, alone seems able *always* to produce. His plan, too, was interesting and not as impracticable as the effect of the drawings made it

appear; but appearances were decidedly against it. Five towers, five domes and a needless circular court must have placed Messrs. Warwick & Hall's design beyond consideration, even had not the entrance from the bridge been impracticable. The designs by Mr. Hare and Messrs. Gardiner & Hill were fine in the scheme of plan, though less successful in the details of arrangement.

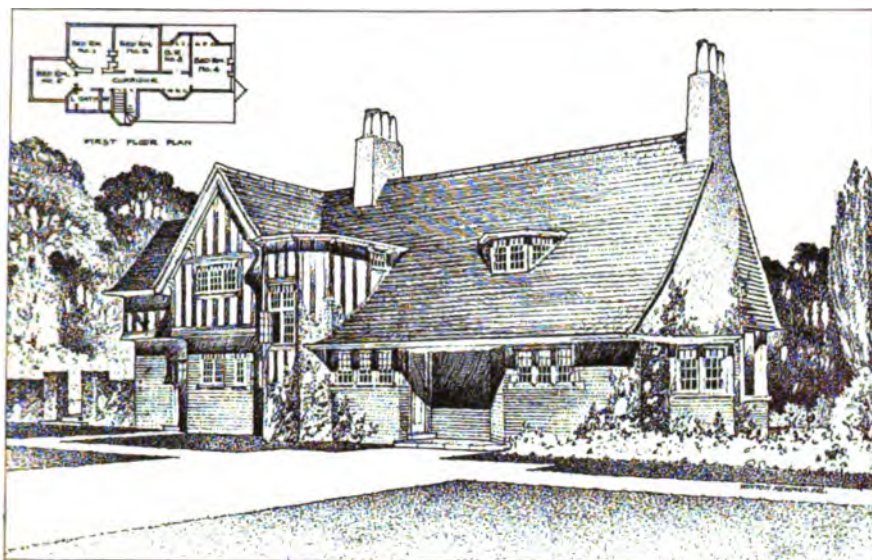
Mr. Hare's elevation was dry; that of Messrs. Gardiner & Hill unmentionable. A very practical, somewhat expensive, quite monumental, but a trifle tedious, design was that submitted by Messrs. Russell & Cooper, whose drawings were the most workmanlike and competent in the exhibition. It was one of the designs which particularly illustrate the new tendency towards clean and scholarly work.

All of the above, to which should be added Mr. Flockhart's interesting design, would rank rather above than below the average in a competition in the United States, but they would need to be somewhat differently presented, for, while in the United States (and all Continental Europe for that matter), it is sought to make drawings to appear as nearly as may be like the completed building, in England it is the custom to make drawings in competitions which we fear even their own authors cannot understand when they get them back. The elevations by Mr. Haywood, Warwick & Hall and Gardiner & Hill suffered materially in this respect, especially those by the last mentioned, while the plan by Mr. Atkinson was an almost indistinguishable maze of coarse lines. This plan, like several others, was marred by an attempt to apply a portion of the plan of the new Government Offices in Parliament Street to conditions for which it was not suited. In the plan of the latter, as observed in our last letter, two corridors are used where one would have been sufficient, and a number of costly and ineffective light courts were introduced for apparently the sole object of containing the stacks of lavatories. In



HOUSE AT WOKINGHAM

MR. ERNEST NEWTON, ARCHITECT



FIRST GARDEN CITY NEW HOUSE

MESSRS. GREENWAY & NEWBERRY, ARCHITECTS

Mr. Atkinson's plan for the County Hall, and also in those of Mr. Fulton, Messrs. Nicholson & Corlette and a number of other competitors light courts run as high as 80 feet or 100 feet, and as small in places as 15x25 feet in area, and quite useless for lighting purposes below the fourth or fifth floor. The amended design by Mr. Knott has been adopted, not without the usual amount of protest to be heard upon like occasions here and elsewhere on the part of a few of the Councillors. The Rev. Frederick Hastings had a number of exceptionally foolish but rather funny things to say. Among other of his pleasantries he championed the design of Messrs. Nicholson & Corlette, upon the point of *average* English architecture of the passing school.

In the competition for the Birmingham Council House extension, a high average quality of design was attained, the winning design, by Messrs. Ashley & Newman, being a notable advance over what had gone on in previous competitions—especially in the Midlands. Messrs. Greenaway & Newberry submitted a strong plan with interesting, though somewhat cold, elevations, while further able competition was shown in the plans of Mr. E. P. Howard and Messrs. Mansell, Mansell & Dixon, and in the well-presented elevations of H. T. Hare.

One of the earliest examples of the new tendency was the Lambeth Town Hall by Messrs. Warwick & Hall, architects, of which a photograph is presented herewith. Except for the main entrance door and a few other minor details, the design is conservative, and is in many respects the best town hall in England since Mr. Belcher built Colchester. It is constructed of small dark red bricks and limestone, has a green slate roof, and in color effect recalls Hampton Court Palace. The site presented the usual diffi-

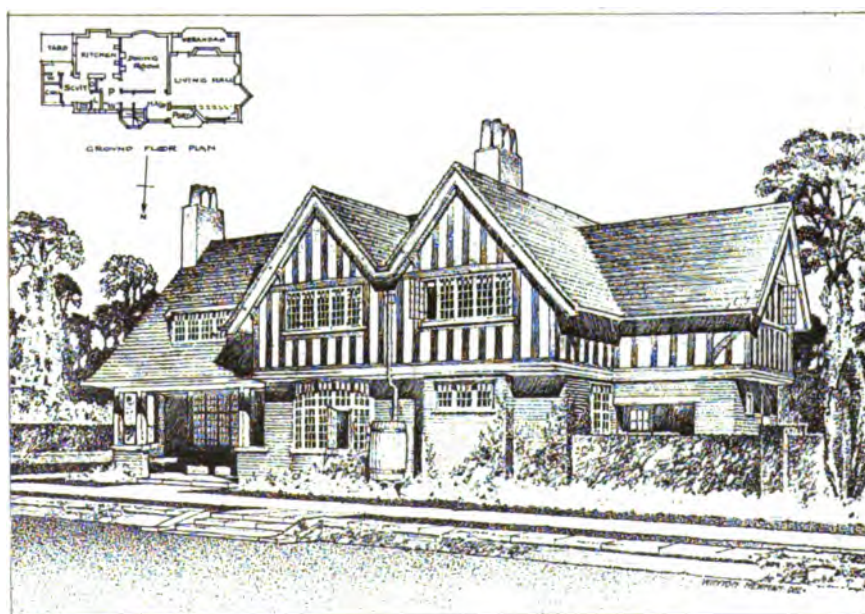
culties of the acute angled corner, with frontages of different lengths, and the problem of planning was complicated by the usual numerous peculiar requirements of the public body in England, aggravated by the customary insufficiency of the appropriation. The solution is extremely successful; everything is planned in its proper proportions, and in the right place, and, in spite of (or perhaps because of) the slight amount of ornamentation, the interiors are most agreeable.

Brussels.—Near the *bois de la Cambre* upon the *plaines de Solbosch*, a favorite promenade of the inhabitants of Brussels, there is to be opened in April, 1910, an International Exhibition, plans of which have been made, and at least some

of the necessary capital raised. The area will comprise about 125 hectares, and buildings with about 100,000 square meters of floor space will be erected. The extent of the enterprise not being enormous, and Brussels itself being one of the finest capitals in Europe, and well worth seeing, an exhibition held there should be a success, provided—but there is the danger—that an exposition for Paris in 1911 is not exploited soon enough to effect a change in the plans of foreign intending visitors.

(To be continued)

The illustrations accompanying Mr. Swale's notes are used with acknowledgments to *The Builder*, and *Building News*, London, and *La Construction Moderne*, of Paris, with the exception of the picture of the Lambeth Town Hall, on page 137, which is from a copyrighted photograph by Mr. Cyril Ellis.



FIRST GARDEN CITY NEW HOUSE

MESSRS. GREENWAY & NEWBERRY, ARCHITECTS

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IT is said that this is the day of practical men. In business, education, politics, and the professions we are told that it is the practical man whose career furnishes the most brilliant record of attainments; whose achievements are attracting the attention of the world. Probably the statement is true. If the proper significance is given to the word "practical" it certainly is. But contrary to an impression somewhat prevalent it appears upon a little investigation that the practical men who have acquired fame and fortune have ordinarily been guided in their efforts not only by knowledge gained from experience, but this has been preceded and supplemented in most instances by a thorough understanding of the theory upon which the business in hand was founded. It would seem in fact that the most prominent practical men are those who have applied shrewdly and made of use theoretical knowledge acquired in earlier life.

TO be practical no longer requires one to remain in ignorance of all theories concerning a subject, nor on the other hand does a theoretical knowledge appear to legitimately interfere with one's ever obtaining any practical experience. In a word, it would seem that theory without practice or vice versa constituted under present conditions but half the necessary preparation for a successful career. Nor is it entirely obvious which of the two requirements is of greater importance. The architect who is content to sit quietly within the four walls of his office and commit to paper the general features of his design, without regard to detail or practical considerations, either through ignorance of or contempt for them, although perhaps more gifted, is still but little more likely to become great and successful, than the man whose intensely practical bent leads to the

erection of numerous buildings of identical design and dimensions in order by reason of much repetition to slightly reduce the cost. The fame of the practical man is indeed abroad in the land, but by this name is designated a new type which represents not only men of action, but men whose actions are directed along theoretically correct lines, and the results of whose actions while often marvelous are never accidental. The practical men of former times who were in fact little more than workmen and who looked with fine scorn on anyone attempting to justify his work by any theory or principle of either art or science are happily disappearing. They were powerful in their day, but like many other primitive institutions they have been obliged to give way to modern progression.

FROM time immemorial the profession of architecture has suffered from the existence and activities of certain persons in almost every center of population, who improperly describe themselves as architects. That they are deplorably lacking both in educational and ethical training is only too apparent to members of the profession. The public, however, which is seldom discriminating in such matters, is prone to accept the architectural charlatan on his own representations, and when disappointed either in consequence of unprofessional conduct exhibited or unsatisfactory results obtained, cries out against the entire calling. Unquestionably the cause of architecture has been done incalculable injury in the public mind by these masqueraders, and the problem of ridding the profession of the undesirable element is not the least of those presenting themselves for solution. It would seem that every conscientious architect should strive to so conduct his practice that a full appreciation not only of the art but of the high ethical standard maintained by the profession will become widespread. Perhaps as a consequence the public might eventually be depended upon to detect the fraudulent, but years must elapse before such happy conditions can be realized. In the meantime many remedies have been suggested, among them a license law. Possibly an adequate license law can be drafted, one offering sufficient protection to the public, without too greatly hampering the art. Some encouragement may be had from the reported experience of States where license laws have been in force for varying periods, but whether these laws as now in operation have in all cases proved an unmixed blessing is apparently somewhat debatable.

ONE of the most significant and hopeful indications of the year would seem to be the awakening of a popular interest in architecture both in Europe and America. The daily papers in Europe are devoting an unusual amount of space to this subject, and the same is true, only to less extent perhaps, in this country. It is seldom that the great newspapers here or abroad give attention or space to matters not of interest to a considerable number of their readers, and if we can assume that it is in answer to public demand that the present articles are published, the fact is cause for much satisfaction. Moreover the expressions and contributions are in the majority of cases very apparently the work of those competent to write on the subjects treated, and for this reason the educational value of the work now being done by the daily press cannot be overestimated. May it long continue.

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No. 1715

The New West Point*

THE scheme for the architectural improvement of the United States Military Academy at West Point is being rapidly carried to completion. This work is under the supervision of the United States

opinion of experts, both within and without the army, concerning what was best to be done to provide the Military Academy with the buildings best fitted to serve its purpose, prolonged the final preparation of the program



A ROW OF OFFICERS' QUARTERS

OVERLOOKING HUDSON RIVER

Government, and its inception dates from 1899, when the discussion of the needed betterments began.

The many problems involved and the diversity of

*The illustrations shown in this number are from photographs made for the *Army and Navy Register*, the owners of the copyright, by whose permission they are published.

which contemplated a total expenditure of \$6,500,000.

The selection of the architect was made after a competition which was participated in by ten firms—Messrs. Cram, Goodhue & Ferguson, of New York and Boston, were the successful competitors.



DETAIL, WEST FRONT

CADET QUARTERS

The prize-winning plans, based on the Tudor Gothic, were a preservation of the type of the principal buildings of the old academy.

At the time the plan was being formulated, General Albert L. Mills, then superintendent of the academy, said as follows:

"The approved building plan has evoked some criticism. In one instance, the criticism has been due to a misconception concerning the lines along which the plan was developed. In others, it has arisen owing to extremely conservative views regarding the functions of the Military Academy. Criticism was to be expected, and has been welcome and helpful when well directed. It can be freely stated that no pains have been spared to obtain the views of persons best qualified to judge the subject, and, in deciding upon the many features involved in the plan, their views have been given the closest study and consideration. I believe the result is one which in all its essential features will receive the approval of unbiased judgment. The plan meets the present requirements of the Military Academy and the requirements which will come from its natural growth for many years. It is susceptible of expansion if at any time it becomes the policy of the government to mate-

rially increase the number of cadets, but this feature is not obtained at unwarranted expense, or at the expense of any of the practical requirements of the academy. The plan retains all the important old buildings which can be saved, meets and overcomes the natural restrictions of the site, and, in the opinion of competent experts, it is not only a plan that can be constructed with economy, but one that will harmonize with the character of the landscape. The provision for a possible considerable increase over the present number of cadets has been made in such a way that the present buildings, and ones to be constructed at the present time, will form an integral part of the final result, and not have to be torn down in any possible future projects."

The general work of construction at West Point is in charge of Major John M. Carson, of the Quartermaster's Department, who is on duty at the Military Academy as the quartermaster of the institution.

Of the group of buildings contemplated in the program there are now completed the cadet barracks, the cavalry and artillery barracks and stables, and many sets of officers' quarters. These are illustrated in this issue.

The foundation of the new gymnasium and the superstructure are practically completed, while the new administration building and bachelor officers' quarters are well under way.

Colonel Larned, in a recent issue of *Munsey's Magazine*, writing of the New West Point, writes entertainingly of West Point, past and present, and its needs based on modern requirements, as follows:

When West Point was founded, the art of war had not been complicated by the vast mechanical and industrial development of the nineteenth century. Military technique was relatively simple, and the equipment of armies in arms, accouterment, and supplies involved a very small fraction of the appliances and elaboration demanded by modern conditions. Logistics, or the mobilization and movements of armies, was a comparatively slow matter of months and shoe-leather, wind and horses; instead of days, locomotors, steam, gas, electricity, compressed air, steamships and balloons.

The only feature in which our ancestors vied with us in elaboration was that of war paint and feathers, and the gorgeous panoply of slaughter—the sartorial element of fighting, which has always played so large a part in man's delight in the destruction of his brother. We no longer deck ourselves, for active service, in the incredible clothes which our great-grandfathers dragged over

the battlefields of Europe and which make their endurance seem Titanic and their patience superhuman in comparison with our own. With our practical conceptions of war as a necessary evil for the adjustment of economic conditions and the delimitation of spheres of influence, we eliminate from the battlefield everything that does not contribute to the business result, and relegate to the parade ground the decorative and alluring features of uncomfortable and picturesque attire.

Since modern war is so costly and is entered upon purely as a business proposition, it becomes important to minimize its duration, and to insure that definite results shall be secured with the least expenditure of time on the one hand, and, on the other, with the most destructive effect possible upon the enemy. To this end there is a constant and intense effort on the part of the great competing powers to keep in advance in the utilization of every expedient that modern science and ingenuity can place at the disposition of the soldier. To be decisively ahead in equipment, and to possess exclusively, or to a very superior extent, an important engine of destruction, is almost sure to be the decisive factor in the quick campaigns of to-day. Our military machinery, from its complexity, is necessarily slow of construction, and requires costly and intricate plants for its manufacture; and there is not sufficient time after the beginning of hostilities by an aggressive and well-equipped adversary in which to remedy deficiencies, and to provide the enginery which, on his side, is already engaged in destroying our resources and demonstrating the justice of his cause.

All this is apropos of military schools and their cost; and, more especially, of the construction of our two national academies which is now in progress. The first question suggested to the lay mind is, "Is it worth while? What return do we get for the money?" to which there is no satisfactory answer without a clear comprehension of the requirements of a military education.

The civil war was a convincing proof that the educated soldier had always an immense advantage over the novice, and that, in the long run, he would surely take the lead. At the end of that tremendous struggle all the armies in the field on both sides were commanded by graduates of West Point; nearly all the army corps and most of the divisions. Out of sixty of the greatest battles of the civil war, in fifty-six the commanders on both sides were graduates; in the other four a graduate commanded on one side, and three of the four were won by the graduates. On the con-

federate side, the tenure of the highest ranks by graduates of West Point was almost exclusive—eight generals, fifteen lieutenant generals, and forty of their major generals were from West Point. Although these facts have been often stated, they are so pertinent to the present discussion that they will bear repetition.

But the answer to the question as to the expediency of military education covers a much more extensive field than that of the demonstration of supremacy in military affairs. The general question can be resolved into several special ones. What does the military education stand for in the community? What has it accomplished in the civil life of the nation? What are the military requirements it meets? What are the demands made upon it by the exigencies of our political system? What has it cost?

What it stands for in the community, I have endeavored to show, and it is pertinent here to recapitulate only briefly its claims in this regard. It stands pre-eminently for that fuller education of the man which embraces not merely mental culture, but the equal and co-ordinate development of the character, the body, and the civic responsibilities—the discipline of all functions, moral, intellectual, and physical. It aims systematically



OFFICERS' QUARTERS

WEST POINT, N. Y.



OFFICERS' QUARTERS

WEST POINT, N. Y.

and essentially to train the habits and to crystalize into practice the suspended conceptions of moral responsibility. It isolates its student body from the atmosphere of commercialism; it provides absorbing employment for both mental and physical activities; it surrounds them with exacting responsibilities, high standards, and uncompromising traditions of honor and integrity; and it demands a rigid accountability for every moment of their time and for every voluntary action. This standard in an educational system is alone of immense value to any community, independent of other considerations, as an object lesson in the evolution of a fine type of man and citizen.

Notes from Europe

(Concluded).

PARIS.—The Place du Carrousel, in the Court of the Louvre, Paris, is soon to be ornamented with four new groups of sculpture, which will be placed between the Gambetta monument and the Arc du Carrousel, and surround the group "Fils de Cain" by Landowski. In front of the latter will be placed the same sculptor's *bizarre* composition called "Architecture"—a bearded giant squatting upon (or perhaps hurdling) a few courses of stonework. If Rodin's "Penseur," or his "Burghers of Calais" may be considered beautiful, no doubt also may this affair called "Architecture," but it has for some architects about as much to interest as the wax figure of Cecil Rhodes at Madame Tussaud's. To either side of the "Fils de Cain" will be placed the groups "Genius Overcoming Time" and "Mansart Studying the Plan of the Louvre," by Segoffin and Ernest Dubois respectively; behind will be placed a monument to Watteau. All of these three latter designs are beautiful works worthy of the excellent sites

accorded to them. These are, as so frequently happens in France, works commissioned by the Government for the encouragement of art. A statue by Mercié and other ornaments are mentioned, while the whole sandy plain is to be converted into a planted garden divided by wide paths, running parallel with the main axis of the Louvre into three plots.

The architect of the new workmen's model tenements in Paris, built by the "Foundation Rothschild"—Monsieur Auguste Rey—has published an interesting proposition for securing the better lighting of rooms by the sun's rays. Due to narrow streets and the construction of tall buildings surrounding such dwellings, M. Rey points out that at present it is almost impossible to retain adequate natural lighting. M. Rey made some experiments in a room of moderate size, having one large window with unobstructed light

which did not extend quite up to the ceiling or down to the floor. He found the space at the sides of the windows to be dark, the ceiling, the wall at the end of the room and nine-tenths of the floor area to be badly lighted. He found that less than half the wall, floor and ceiling surfaces were adequately lighted; that an equal area was badly lighted, while about eleven per cent. was in semi-darkness. In other words, the sun's rays did not penetrate to half the surface of the room. Such darkness in workmen's dwellings leads to disease. To overcome the danger as far as possible by increasing direct and reflected light is the task M. Rey set himself. The means he proposes are simple. He says that windows should reach from floor to ceiling, thus lighting both; that the angles formed between the front and side walls at either side of the window should be filled in by a surface at an angle with both, forming a triangular cupboard in each corner, which arrangement effectually lights the whole of the front wall. Finally, to light the back wall if the room is not very large and is approximately square, he suggests a gentle slope to the ceiling down from the top of the window towards the back wall. If the room is deep he proposes a cove or rather a parabolic curve between the inner wall and ceiling. Practically the whole surface of such a room is properly lighted—only three-tenths of one per cent. being in obscurity. The cost of forming these features according to M. Rey would not add 25 cents a year to the rental of a room of average size. As to appearance, the room being better lighted looks larger, and the slope of the ceiling so slight as to be unnoticeable and the curve at the end hardly perceptible, while if so it would be agreeable to the eye rather than otherwise. The scheme which employs all possible reflected light appears practical, and as tending to solve the problem of lighting rooms in cities where prismatic glass would be objectionable aside from the matter of expense.

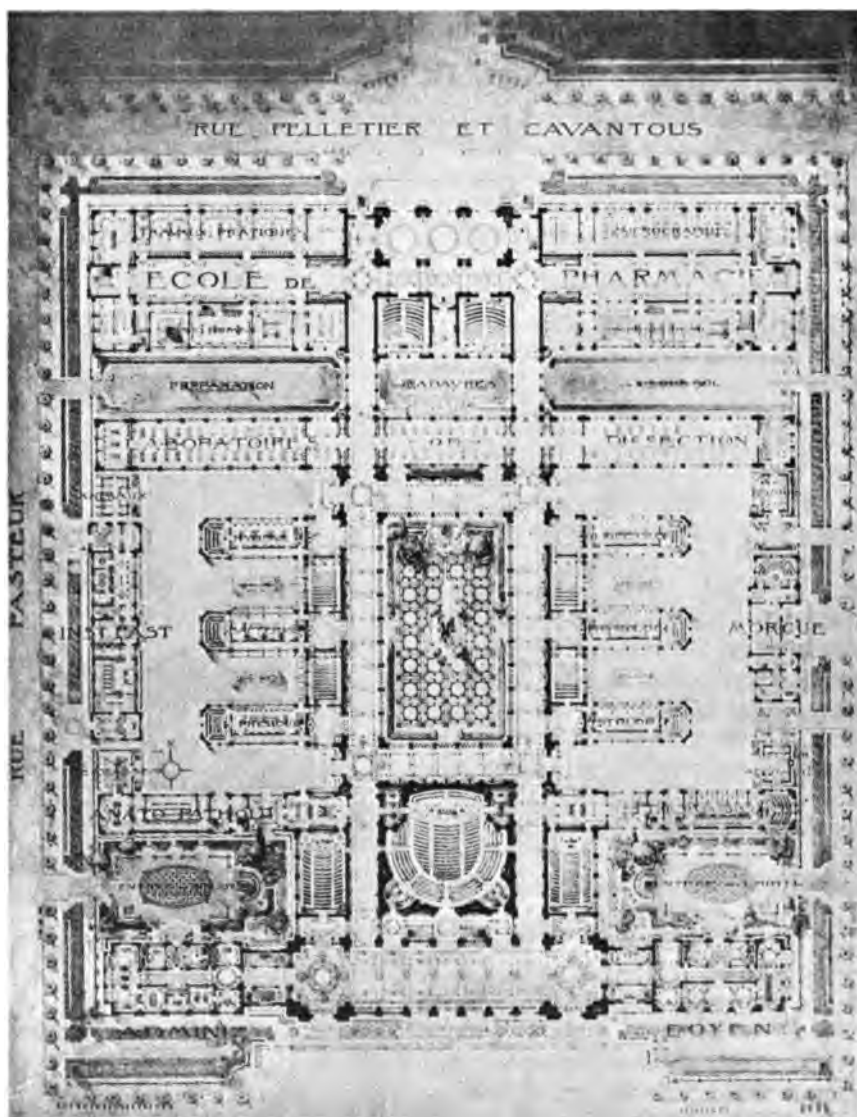
CONCOURS DU GRAND PRIX DE ROME, 1^{er} GRAND PRIX

M. BOUSSOIS

Turin.—Signore Fenoglio, Molli and Salvadori are the architects who have prepared the general plan for the Turin International Exhibition in 1911. The exhibition will extend for a distance of more than a mile along the banks of the River Po; a national monument, and a new bridge between the present bridges, Isabella and Humbert I. The project is ambitious and will cover an area of about 1,500 acres.

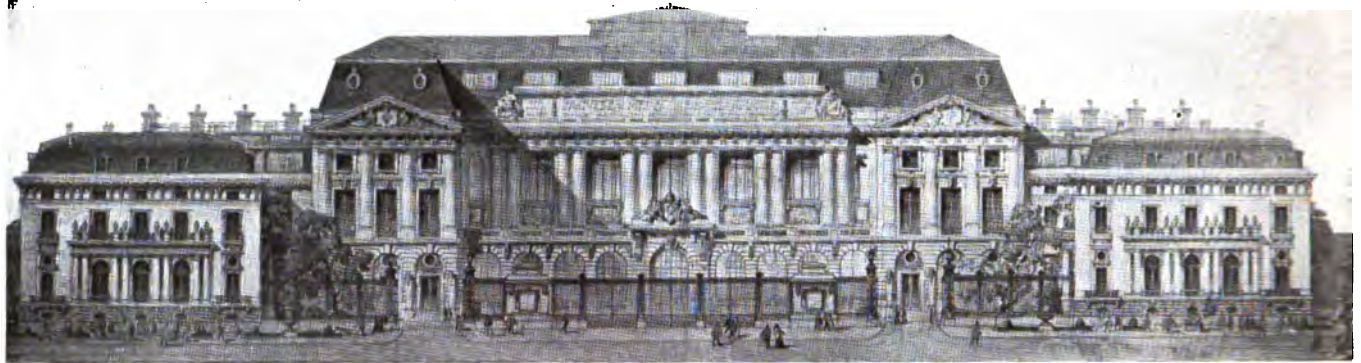
Les Grands Prix de Rome.—It is some years since the name of Charles Boussois first came to the general notice of the pupils of the *Ecole des Beaux-Arts*, and hence to be known to a great many architects in America, due, if I remember rightly, to winning the *Prix Chaudesaignes*. The *Prix Labarre* followed not long afterwards, and a place as *logist* in the competition for the *Grand Prix* came four years ago—the time Lefèvre won—when the elevation by M. Boussois was much remarked upon by visitors to the exhibition. Since then, among other things, he has won the *Prix Achille Leclerc* and the *Prix des Architects Americains*, exhibited at the salons of 1907 and 1908 respectively, besides taking his diploma. As soon as the names of ten competitors were announced, last spring, M. Boussois, pupil of Pascal, was named the probable winner, while Woillez and Villeminot appeared to be favored for second choice. The result showed Boussois first, Villeminot, pupil of Redon, first second, and Boutterin, pupil of Raulin and Heraud, second second. The other competitors were Woillez, Migéon and Marrast, all pupils of Marcel Lambert; Durand, Atelier Deglane; Gautrauche, Atelier André; Malrien and Moreau, of the Atelier Daumet-Esquité.

The winner is but 34 years of age, but had been a pupil in the Atelier Pascal for nearly nine years—except for his period of military service. The problem was *Une Faculté Mixte de Médecine et de Pharmacie*, a vast subject carrying with it a multitude of absolutely



PLAN

M. BOUSSOIS

CONCOURS DU GRAND PRIX DE ROME, 1^{er} SECOND GRAND PRIX

M. VILLEMINT

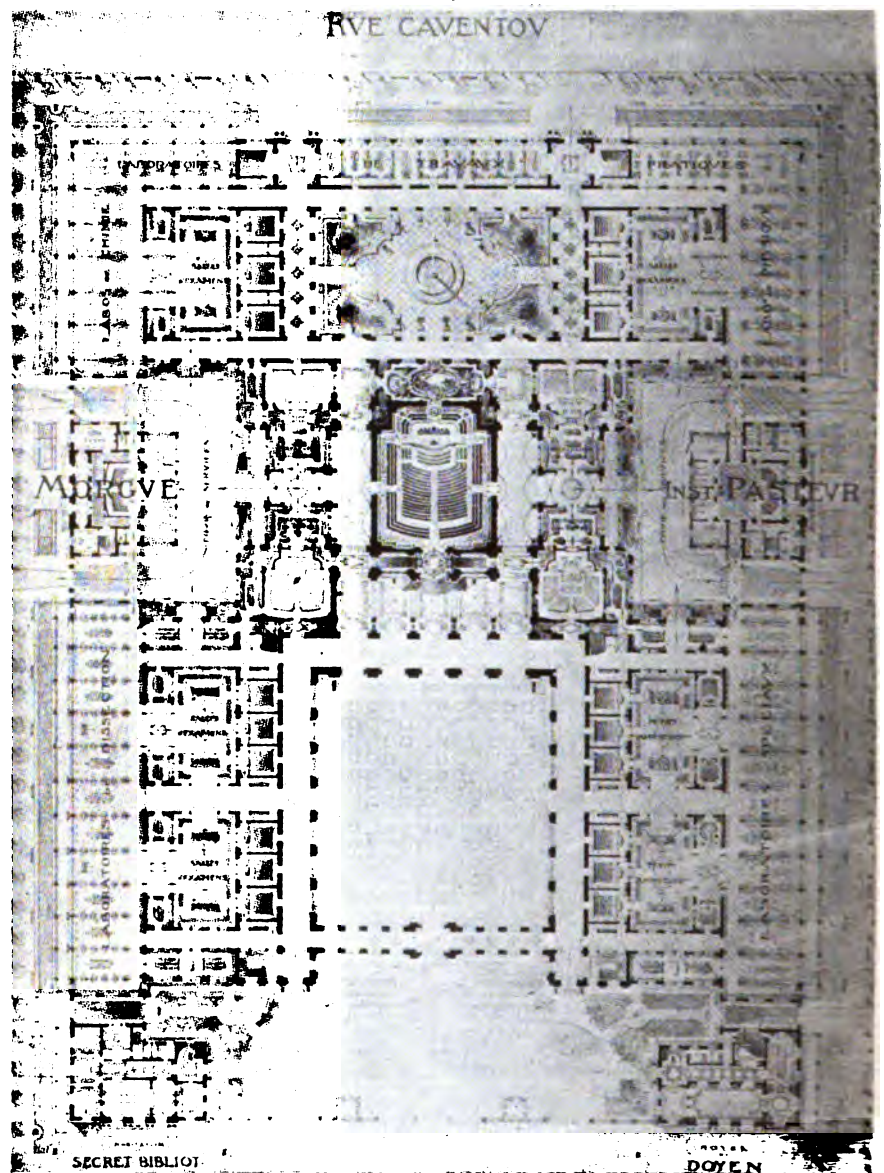
modern departments and services. The problem consisted in setting out judiciously these numerous services so as to fulfill their functions and the due relations of one to another and obtain an harmonious and practical composition.

The proportions of the site were apparently given as 4 to 5 and the principal frontage assumed to be on the shorter side—a site similar to that given in 1898, when Tony Garnier won the "*Grande Timbale*" with his famous bank plan which, as to indication at least, established a new type which was followed by Prost in his winning design for a national printing house in 1902 and influenced several of the plans submitted in 1904 for a manufactory of tapestries and carpets.

The general disposition of the principal parts of the plan by M. Boussois and also that of M. Bouterin is similar to that of Garnier though more closely resembling the decorative effect of the fine plan by Prost. The similarity, however, is suggested rather than actual, for this year's plan is not only one of the most useful studies of a practical plan that has ever been produced in a design submitted for a *Grand Prix*, but is a fine decorative composition as well; while the clever distribution of the parts, grasp of the subject and its monumental treatment and the remarkable amount of study and thought displayed in the arrangement of details of the service is such as we expect to find only in the executed works of masters.

The front corners of the site are occupied by the Administrative Offices and the residence of the *Doyen*, which are entered from gardens behind these wings and communicate with the grand vestibule, which occupies the centre of the main front. The principal

amphitheatre of the School of Medicine is immediately behind the main vestibule, from which it is separated by the stairs to the balconies, as at the Sorbonne. The six laboratories of hygiene, experimental medicine, physic, physiology, bacteriology and "*histologie*," with their little special amphitheatre placed at the end of each



PLAN

M. VILLEMINT



CHURCH OF THE MADONNA DI VICO

PIEDMONT

laboratory, which has also its own ante-room, communicating with which and lighted from the open courts between the laboratory wings, are the four small lecture rooms, all of which are arranged round a beautiful arcaded central court. The whole group is surrounded by a hollow rectangle of buildings which, inside, is the proportion of about two squares. At either side of the principal amphitheatre are the Pathological and Anatomical and Biological and Physical laboratories with their large lecture rooms adjacent. The Pasteur Institute and Morgue face the lateral roads, whilst the fourth side of the rectangle is made up of dissecting laboratories. The back portion of the site is occupied by the School of Pharmacy, which is separated from the School of Medicine by a road which descends and serves the basement in which the corpses are prepared for the dissecting laboratory. The two schools are joined by bridges over this road.

The elevations are distinguished and notably well proportioned even for a *Grand Prix*, but are somewhat cold.

The second prize seems to have been awarded to M. Villemot rather upon the strength of his record than his design in the present *concours*, as his plan is far less successful, especially as regards the placing of the group of dissecting rooms, than that of M. Boutterin, who was placed third, and his elevation is much too broken up and is extremely heavy. M. Boutterin's plan follows the same general scheme of disposition as

the first prize design, but the placing of his laboratories against the side streets and the general handling of the details of arrangement display a lack of sound knowledge of his subject. His elevations are rather too reminiscent of M. Ne-not's front of the Sorbonne.

Paris Water Supply.—The water supply of Paris is said to be insufficient and otherwise unsatisfactory, and several projects for a new supply are being considered, among others, a proposition to obtain it from Lake Geneva in Switzerland.

Parliament House for Turkey.—It is reported that the Sultan of Turkey has promised to build a House of Parliament. Competitors for the Peace Palace at The Hague may, therefore, have another chance at an international competition in the near future.

The journals for the month contain by way of illustrations the following items of interest: *The Builder* published a charming house by Mr. Ernest Newton and photos and drawings of the interesting domical Church of the Madonna di Vico, Piedmont. *The British Architect* a number of sketches by Mr. T. Raffles Davison of the smaller buildings and kiosks of the Franco-

British Exhibition, and a house by Mr. Lutyens. *The Building News* a number of good, small houses and "24 Margaret Street, W," by Mr. Belcher. *The Builders' Journal* the Customs House at Dublin, the Quadriga to complete the Wellington Arch on Constitution Hill and the usual quota of commonplace dwellings. *The Architectural Review* illustrates a fine bank at Leeds by the late R. J. Johnstone, several American office buildings and the atrocious building of the Hamburg-Amerika Line in Cockspur Street. Also some interesting measured drawings which it terms the "Practical Exemplar of Architecture." *La Construction Moderne* contains, besides the designs for the *Prix de Rome*, the designs for the new theatre at Amiens, mentioned in our letter for August. Restoration of the Hotel Berthelot at Poitiers, an interesting building in the style Francois I; measured drawings by M. Dubois of the charming little Chateau de Pignerolles, near Angers, with its exquisite details of the best period of the style Louis XVI. It also publishes a number of the designs, submitted in the international competition for the National Monument to be erected at Buenos-Aires. French, Belgian, German, Spanish, Italian and Argentine designs were placed in the order named. It also publishes the first and second prize designs for the Finnish House of Parliament. *Berliner Architekturwelt*, 7 Heft, has just made its appearance. It contains several "flats" in the "Perpendicular and Toda style.

FRANCIS S. SWALES.

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IT is the unquestioned prerogative of any one enjoying the privileges of a free country, such as we boast, to comment upon or criticize any subject, place, person or thing attracting attention. In general, however, it may be said that the criticism is valuable or otherwise depending upon the knowledge, ability, sincerity and purpose of the critic. If he be a man of unusual capacity as attested by the measure of his attainments, and if moreover there can be no suspicion of an attempt at self-exploitation, either in the nature or quality of his utterances, or the manner of giving them expression, his comments, whether censorious or commendatory, would seem to merit serious attention. On another page is printed a series of comments in most cases taking the form of adverse criticisms reported in a recent issue of the *New York Times* to have been made anent the architecture of New York by M. Rey, an architect of Paris. Whether M. Rey can qualify as a competent critic under the requirements indicated above, the profession can readily judge, as the buildings which called forth his intemperate remarks are in general familiar to it. Ordinarily, the profession has experienced little difficulty in distinguishing between able and sincere criticism, and expressions which reflect little more than the inordinate conceit of the author, and there need be no apprehension concerning the accuracy of its judgment in this case. The fact that heretofore great difficulty has been encountered in securing free and full expression of opinion by undeniably competent architectural critics among the ranks of practicing architects is worthy of note. Architects of exceptional and unquestioned abil-

ity have ordinarily been found to also be the possessors of dignity and an unwillingness to give wide publicity to free expressions of opinion unfavorable to their contemporaries. It would be surprising, therefore, and of much interest if it could be shown that in the person of M. Rey the first attribute is present when the latter are so conspicuously absent.

WHILE there may perhaps be some difference of opinion as regards the causes which contributed to it, there apparently exists perfect unanimity of feeling between Mr. Delissa Joseph and Professor Padelord concerning the present unhappy state of much of the architecture here and abroad. We had occasion not long since to call attention to Professor Padelord's address delivered before the Washington State Chapter A. I. A., in which he advocated the appointment of a City Architect as an integral part of the Municipal Government of every city. By such means and the exercise of broad powers a standard of excellence in design would not only be established and maintained, but all future work would be made to conform as far as possible or expedient to adjacent structures. Mr. Joseph, writing in a recent issue of the *London Times*, after commenting upon the generally inartistic and unsuitable buildings which tend to disfigure the countryside, suggests as a remedy a Ministry of Fine Arts which, with local committees, would control the design of buildings much after the manner in which the sanitary and constructive features are controlled at present. In his judgment, the establishment of a system of public control of the design of buildings by Ministry or otherwise, furnishes the only hope of relief from the distressing disfigurement of the country going steadily forward on every hand. In a word, what Professor Padelord proposes for the city Mr. Joseph declares is no less urgently required for the country, and although the means by which the desired results may best be sought are perhaps somewhat in doubt, there can be little question but that effective control of the design for all buildings once wisely established, would be of great commercial as well as aesthetic value in both city and country.

A MOVEMENT which would seem to give promise of future results of considerable importance to the profession was inaugurated at a meeting recently held at the Grand Union Hotel, New York City. The object of the meeting, as stated, was to take preliminary steps looking toward the organization of an Architects' Business Association. An organization of this description has been in existence in Chicago for some years, and has been of undoubted assistance to its members and the profession of that city. It would seem that there is room for such an Association, and a business organization supplementing the work of the New York Chapter A. I. A. could be of much aid and benefit to the profession. Moreover, there is apparent a growing tendency to hold architects more strictly accountable than heretofore for the conduct of the business affairs in connection with the execution of any commission entrusted to them, and it would be well to give consideration to any means which would seem to promise greater business efficiency.

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No. 1716



THE ALASKA-YUKON-PACIFIC
EXPOSITION IN 1909

MANUFACTURERS' BUILDING

MESSRS. HOWARD & GALLOWAY
ARCHITECTS

Alaska-Yukon-Pacific Exposition in 1909

ACTIVITY is the keynote on the grounds of the Alaska-Yukon-Pacific Exposition at Seattle at the present time. More than a thousand men are busily engaged in the task of creating the Pacific World's Fair. With the work already finished and the rapidity with which work under construction is being carried on, every indication points to a completed exposition on opening day, June 1, 1909.

The work has progressed so far that a visitor can begin to obtain some idea of the way the exposition will look when all of the buildings are finished.

A portion of the campus of Washington University, the Exposition grounds, is 250 acres in extent, twenty minutes' ride from the heart of the city, and have been pronounced by many as, scenically, the finest ever used for a similar purpose. Set between two beautiful freshwater lakes, Washington, bordering on the east and Union on the west, the grounds present unsurpassed stretches of water front, and tall, stately trees, fine vistas, gentle slopes and commanding natural terraces add to the beauty of the picture. The principal thoroughfare, Rainier Avenue, is on a direct line with that

white-capped sentinel, Mt. Rainier, 14,526 feet in height, whose snow-topped peak looks down on the exposition grounds the year round. On the west are the snow-covered Olympics, while on the east Mt. Baker towers above the white-capped Cascade range.

All of the work is well in hand. Taking the exposition as a whole, it is more than sixty-five per cent completed.

The Manufacturers' Palace, a large structure fronting on the east side of the Court of Honor, was the first to be completed. A twin structure, the Agriculture Building, across the court, was the next exhibit completed, and then the Machinery Hall, a permanent brick building. It may be well to explain that the Alaska-Yukon-Pacific Exposition includes in its plan the erection of permanent structures. There will be at least four large ones and many small ones. The largest will be the Machinery, Fine Arts, Auditorium and Forestry Buildings. The first three are being built under the direction of the Board of Regents of Washington University, upon the exposition grounds. Under the act of the Washington Legislature appropriating \$1,000,000



THE ALASKA-YUKON-PACIFIC
EXPOSITION IN 1909

AUDITORIUM

MESSRS. HOWARD & GALLOWAY
ARCHITECTS

for the 1909 fair, it was provided that \$600,000 was to go into permanent buildings for the use of the exposition during the period, and after that for the use of the State institution of learning. The Forestry Building will be erected by the Washington State Commission, which has the remaining \$400,000 to spend on the State's participation. This structure will be built of huge logs in their natural state, along new architectural lines for such a building.

The Auditorium is near completion, and the Palace of Fine Arts across Puget Plaza, which is just inside of the main entrance, shows its steel and brick well advanced. The Mines and the Fisheries Buildings are practically completed. The Administration Building, where the offices of the exposition are located, has been occupied for a year and the Emergency Hospital has been in commission for many months. Many of the decorative features for the general effect have progressed to the stage where it only requires the finishing touch to get them ready. These are the Cascades

and the Geyser Fountains. For over a year a nursery for the cultivation of flowers, plants, shrubs, etc., has been in operation, and just as soon as a building is finished, its surrounding ground is landscaped.

Other large exhibit buildings that will be started in the near future are the Foreign, Transportation, Forestry and Machinery Annex. The latter was found necessary on account of the large number of applications for space in this classification.

The Government group, which constitutes a small exposition in itself, will be begun early this fall, providing ample time in which to finish it before opening day. Consisting of the main Government building, a structure for Alaska, Hawaii and the Philippines, a forestry and irrigation building and the fisheries building. The group will stand at the head of the Cascades, closing in the northern end of the Court of Honor. The United States Government will expend \$600,000 on its participation. Of this sum \$250,000 will be put into buildings and \$350,000 in exhibits.



THE ALASKA-YUKON-PACIFIC
EXPOSITION IN 1909

MACHINERY HALL

MESSRS. HOWARD & GALLOWAY
ARCHITECTS

ALEXANDER'S "CROWNING OF LABOR" THE MURAL PAINTINGS FOR THE CARNEGIE INSTITUTE, PITTSBURGH

In a recent article in the *Pittsburgh Despatch*, a writer entertainingly describes the mural paintings recently completed by John W. Alexander for the Carnegie Institute.

These paintings probably represent this gifted American artist at his best and will form one of the greatest attractions of the art-loving visitor to the Institute.

The article referred to is in part as follows:

John W. Alexander's "Crowning of Labor" in the murals for the decoration of the Carnegie Institute is being further amplified by twenty-eight more of the handsome panels that are being put in place. Some of these are from 16 to 18 feet high and they carry out the theme of Pittsburgh, typified by a mailed knight, rising from the smoke and steam and dust of industry, and being crowned with tributes brought by heralds from all directions, as portrayed in the lower corridor.

The new panels carry out to further completion the theme, labor ever uppermost, yet lifted from the plebeian to heights of art and beauty.

On these Mr. Alexander has labored incessantly for almost two years. Two studios in New York were maintained, one devoted exclusively to the murals and the other for portrait work. The artist would work at the murals until almost worn out, and then, closing up the studio would go to the other and fill a few sittings to relieve the tension of his stupendous work.

The clouds of steam and smoke that ascend from the first floor, are still carried out in the second floor paintings, though the tone is in a lighter vein. On the west wall to the right of the main stairway is one large panel portraying the strength and power of the mechanical Pittsburgh. Against the shadowing hills, the river threads its way, while on the near side from out the clouding atmosphere, furnaces and stacks belch their flames and smoke which float over the river, and mingling with the smoke from the river craft, partly obscure the modern water transportation facilities. In the foreground, locomotives pulling the mighty freight trains, that carry away the product of an industrial center, almost lose themselves in the exhaust of a laboring machine.

On the opposite wall the blast furnace and its cupolas, with the various buildings in the foreground, push their crowns above the ever-ascending clouds emitted from the chimneys, that indicate the utmost use of muscle and brawn. The corner panels still further portray the heralds bearing their garlands to the figure Labor, giving the effect of coming from all sections of the universe. Smaller panels are of steel-workers high in the air astride great beams, knitting together the mighty framework of a modern building.

Over the stairway to the third floor 12 panels not yet in place will portray the energy and restlessness of the busy life. In these figures of children are used to a greater extent than anywhere else, and the 12 panels in all contain about 400 figures. Each panel has a distinctive treatment, yet not once is there a departure from the main theme of portrayal of strength and power, and energy and labor.

An interesting incident, in connection with the painting of the panel of bridge workers, is told by Mr. Alexander. His studio is on West Fifty-seventh street and at the rear an immense apartment house was being constructed. The construction workers were clambering over the frame work as it was being erected. The pulleys and guy ropes were in position, and from these the artist could get his setting. A wooden structure resembling a girder was erected in the studio, and two of the men working on the building, in their very working clothes, were induced to leave the building and enter the studio with their tools, and straddle the improvised girder. These were the models for the great painting that now adorns the second corridor of Carnegie Institute.

T-SQUARE CLUB ELECTS OFFICERS

At the annual meeting of the Philadelphia Chapter of the American Institute of Architects, these officers were elected: D. Knickerbacker Boyd, president; W. D. Hewitt, first vice-presdt.; M. B. Medary, second vice-presdt.; Arnold Moses, secty., and C. L. Borie, treasr.



SPIRIT OF THE PACIFIC

F. H. FROLICH, SCULPTOR

THE ALASKA-YUKON-PACIFIC EXPOSITION IN 1909



THE ALASKA-YUKON-PACIFIC AGRICULTURAL BUILDING MESSRS. HOWARD & GALLOWAY
EXPOSITION IN 1909 ARCHITECTS

CARNEGIE INSTITUTE'S HALL OF ARCHITECTURE AN IMPORTANT ADDITION TO ART MUSEUMS IN THIS COUNTRY

A writer, in a recent issue of the *Outlook*, describing the Carnegie Institute at Pittsburgh, Pa., writes as follows of the Hall of Architecture:

"In these sections of the Department of Fine Arts it has been Mr. Beatty's purpose to produce an inspiring impression of beauty which shall make an instant appeal to the imagination, and in this he has certainly succeeded. In the Hall of Architecture, Mr. Beatty has cared less to convey bare archæological information than to create enduring and uplifting images. The writer describes with justifiable enthusiasm the impressive and beautiful effect of the great copy of the façade of St. Gilles, which fills one entire side of the hall. There is a perfect illusion. We are suddenly transported, as if by some magic carpet, to France, and stand in the porch before the abbey church of St. Gilles, in the department of the Gard—not a fragment, but the entire porch itself, with its heavy doors swung open, so that we may mount the worn step and cross its threshold. This beautiful Romanesque façade of the twelfth century, so exactly reproduced, true in color and accurate in detail, has an indescribable effect.

"Besides the Church of St. Gilles, the hall contains many other admirable casts, among them the Lions' Gate from Mycenæ; the Choragic Monument of

Lysicrates; the south end of the Erechtheum; and examples of French and Italian Gothic, French and Italian Renaissance. About 125 casts are to be added to those already in place, and the hall will then represent with reasonable completeness the entire history of architecture from the earliest periods to the late French Renaissance. In an important sense the dual character of the exhibition will be maintained; inspiration for the layman and definite technical instruction for the student."

RESTORATION OF THE ALHAMBRA

The entrance to the Alhambra, the "Puerta de la Justicia," has settled to such an extent that its restoration has been put in hand. Further repairs are being executed on the "Torre de las Damas," where a few months ago most interesting Moorish frescoes were discovered on the walls. Since the ceiling paintings in the "Sala de la Justicia" were executed by Christian artists of the Italian School, these recently discovered frescoes are the only examples we have of figure painting by Moorish artists. They date from the fourteenth century, and are the work of artists who were more familiar with works of decorative nature than with the representation of men and animals. They may be ascribed to the same masters who adorned several halls in the Alhambra with decorative paintings. At least two artists were engaged on the work, which represents a lion hunt, a remarkable stag hunt, archery, a procession of horsemen and camels, etc. The details of the ornament are finely executed, but unfortunately the paintings are in bad condition.

These restorations are part of a plan which includes the preservation of important buildings in Spain.



THE ALASKA-YUKON-PACIFIC AGRICULTURAL BUILDING MESSRS. HOWARD & GALLOWAY
EXPOSITION IN 1909 ARCHITECTS



THE ALASKA-YUKON-PACIFIC
EXPOSITION IN 1909

MINES BUILDING

MESSRS. SHACK & HUNTINGTON AND
HOWARD & GALLOWAY, ASSOCIATE ARCHITECTS

NORTH-WESTERN FRANCE—TOURING IN NORMANDY AND BRITTANY—AN IN- TERESTING FIELD FOR RECREATION

From May to September Normandy and Brittany are at their best. The architectural tourist, starting from Rouen, journeys west and south, over a country replete with interesting monuments. Dotted over the landscape are the small holdings of the thrifty Norman farmers. The scenery, diversified in character, affords good material for the artists, while the extant châteaux and manorial houses give the student many opportunities for sketching and study.

As to a prevailing style, the early pointed gothic may be said to find its best examples in Norman-France. Rouen, Mantes, Coutances and Bayeux cathedrals are most dignified examples of this style, and are well known to the architectural student. But, in a tramp afield there are to be found many interesting buildings, well preserved, that are worthy of study. A few are here presented, of sufficient interest to warrant illustration.

Near Mortree is the Château d'O, built during the XVI Century. The detail here shown indicates the good state of preservation of this historic château, owned by one of the mignons of Henry III.



CHÂTEAU DE JOSSELIN

BRITTANY



GATEWAY, CHÂTEAU DE JOSSELIN

BRITTANY



CHÂTEAU DU FONTAINE HENRI

NORMANDY

The Château Fontaine-Henri, near Caen, is another good example of the manorial house found in Normandy to-day. This château, together with its interesting chapel,—which is said to date from the XIII Century,—is a favorite neighborhood for artist painters and architects, who find many motives for sketching not only in the château and its dependent buildings, but in the picturesque neighborhood as well. When the Dukes of Normandy reigned in England, Caen was the great port of communication between that Duchy and Great Britain. Probably few sections of France will better repay the tourist in search of motives for brush and pencil,—as it is replete with the best examples of the Renaissance.

Perched high along the banks of the river Oust, in Brittany, is the splendid Château de Josselin, sometimes known as the "Warwick Castle of France."

This rock-ribbed château dates early in the XII Century. It was long an important fortress and has successfully withstood the storm and shock of many a prolonged assault. The gateway here shown was at one time approached by a drawbridge, which spanned a wide moat. There remains evidence of the two towers which defended the drawbridge. The grim front, fac-

ing the river, presents the plainest type of medieval architecture, in sharp contrast to that of the inner walls, as shown in the illustration.

As the tourist approaches the shores of the British Channel the character of the scenery changes. The villages are closer together. Near Dieppe will be found the interesting old manor house of Jean Ango, a merchant prince of the time of François I. It is a good type of the prevailing house of the rich of that period. In spite of age and many changes of ownership, this interesting example of XVI Century architecture is in a fair state of preservation. It is constructed of brick, diapered with flint, and has windows and mouldings of stone. Within is a remarkable stone chimneypiece of rare design.

A MEMORIAL TO ADMIRAL SAMSON

In the window on the north side of the nave of the chapel at the United States Naval Academy, Annapolis (illustrated in our issue of July 1, 1908), has been placed a memorial to the memory of the late Rear-Admiral Samson. The window is a representation of the resurrection and was provided for by popular subscription among the officers of the navy.



MANOR HOUSE OF JEAN ANGO

DIEPPE



COURTYARD, MANOR HOUSE OF JEAN ANGO

DIEPPE



CHÂTEAU D'O

MORTREE

THE PACIFIC ELECTRIC BUILDING, AND THE JONATHAN CLUB ROOF GARDEN, LOS ANGELES, CAL.

The rooms and roof garden of the Jonathan Club, on the upper stories of the Pacific Electric Building, at Los Angeles, were an afterthought.

At the time the external character of the building was determined by Mr. Thornton Fitzhugh, the architect, the contracts let and the construction work well advanced, no thought had been given to the adaptation of the upper floors for club purposes. This problem was therefore a most difficult one, not only because the changes involved were many and complicated, but owing to official dictation and limitations imposed, the result is one in many respects quite at variance with what would have been accomplished had the architect been allowed freer rein in his work. None the less the Pacific Electric Building presents characteristics that would entitle it to some measure of recognition if built in the largest cities. Its proportions for a city the size of Los Angeles are unusual and its equipment such as will meet every condition of a first-class office building.

The building stands on a plot 285 x 211 feet, and is nine stories high. The total floor space is more than

twelve acres, and exceeds in area the Broad Exchange Building in New York, which is 21 stories high. The structure was erected for the Pacific Electric Railway Co.

The basement has a clear floor space of 58,000 feet and is designed for use as a freight depot.

The main floor ceiling is thirty feet high, supported by cement columns. Through an opening sixty feet high, spanned by a cement girder eight feet deep, the cars enter the building.

The upper stories from the second to the sixth inclusive are devoted to offices. There are ninety-nine offices on each floor, or a total of 594 in all.

No office is less than twenty by fifteen feet, and they range in size to a maximum of sixty by thirty feet.

The attractiveness of the club quarters on the eighth and ninth floors may be judged from the illustrations herewith. Looking south over the roof garden, from the 190-foot corridor or balcony which parallels it, one has a magnificent panoramic view of the city, while on clear days Catalina Island and the Pacific Ocean can be distinctly seen.

The balcony, parapet rail and stairs of the roof garden are of concrete, while the court walls are of cement on metal laths and metal studs. The pilasters are of solid cast concrete; the ornament and cornice are of cast cement.

The ballroom, shown in the illustration, is 60 x 96 feet. Everything visible above the floor, excepting the seats, is of concrete. This room, the ceiling of which is 30 feet high, had to be adapted to windows corresponding to those in the other parts of this story, when the ceilings as originally planned were but ten feet high.

From this the difficulties presented by the problem can be readily appreciated. The musicians' gallery and the deep semicircular ribs are devices for overcoming acoustic difficulties of a concrete vault.

CLAY IN CEMENT MORTAR.

Additional data on the effect of clay in concrete are afforded by recent tests conducted by the Ulster and Delaware Railroad Company. The object was to determine the effect produced on the impermeability and tensile strength of cement mortar by the addition of clay. The clay was carefully selected, pulverized to pass through a 2,500-mesh sieve, and added to Portland cement in two mixtures of 1 : 7 and 2 : 7 respectively. Test briquettes were made with one part of cement and clay composition to three parts of sharp sand. From the results of the tests it appears that specimens of the mortar 8 in. thick were able to resist the percolation of water under the pressure of 40 lb. per square inch, that the tensile strength of briquettes containing a mixture of clay and cement in the proportion of 1 : 7 was somewhat greater than that of specimens made without clay, and that the admixture of clay with the cement in the proportion of 2 : 7 caused a reduction of strength. We understand that the idea of the railway company is to employ cement mortar prepared in this way as a water-tight lining for concrete walls. In general practice the permission to admix clay with concrete would probably lead to the inclusion of undesirable earthy and vegetable matter unless very stringent precautions were adopted. —*Exchange*.

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IN our issue of November 4th appeared extracts from an article by Mr. Hermann Kobbe published in the New York Times of November 1st replying to M. Rey's comments on New York's architecture. Mr. Kobbe while taking issue with the French architect's expressions of opinion in many instances, finds much in his utterances to which he subscribes. In the matter of architecturally untreated side walls of buildings visible from the street, M. Rey and Mr. Kobbe agree that New York is sadly deficient. That the treating as façades of all walls exposed to view would add immeasurably to the esthetic appearance of the city no one will deny, but sight should not be lost of the fact that many of the bare walls are only exposed temporarily, or till the next door neighbor improves his property. Even in the case of a very high building, who can determine that within a comparatively short period of time the adjoining property will not be improved with a building of equal or greater height? In such a case the question for solution is whether the increased value due to improved appearance in the interval pending final development of the locality, is commensurate with the greater cost of construction, that the architectural treatment of exposed side walls would involve. It is perhaps a trifle unfair to pass judgment on features involving mass, skyline and naked walls on property lines, while a city is so obviously passing through a period of transition.

WHEN we consider individual examples of detached buildings, it is possible that criticism is more clearly justified, that it may even prove beneficial if well founded and discriminating. We deplore however the readiness with which self-constituted critics, whose achievements are noticeably lacking in comparison with their opportunities, indulge in destructive criticism of works often far beyond their own humble capacities. It is comparatively easy to prate of absurd adaptations and misapplied motifs, and many of the more or less nebulous theories concerning what a building should or should not express when used for certain purposes are quite attractive, but it is worthy of note that when at rare intervals the criticism of the praters takes a constructive form there are the widest differences of opinion evident both as to method and purpose. However, we would not discourage competent instructive commentary. We undoubtedly learn more from our own errors than from the most brilliant successes of others, and to obtain the greatest benefit perhaps it is necessary to have them rudely dwelt upon occasionally by an unfeeling critic.

THE remarkably efficient work done by The Bureau of Municipal Research in connection with the preparation of New York City's Budget for 1909 is not only deserving of highest commendation, but would seem to mark an epoch in methods that make for more economical, intelligent and better city administration. In attempting to discover the facts and conditions and present them in a manner easily understood by all, this Bureau has inaugurated one of the most important movements of the times, and one that seems destined to have a world-wide effect. There has never been any appreciable difficulty in making correction when the exact location and cause of inefficiency or abuse has been discovered and demonstrated, but heretofore, while dissatisfaction has been widespread and agitations frequent, they have lacked intelligent direction on account of a paucity of facts supported by detailed information. With a prospect of greater efficiency of administration and a fuller comprehension of municipal affairs on the part of the people, the day of civic betterments draws perceptibly nearer.

SIR WILLIAM RICHMOND is reported to have declared that the cardinal defect of the English schools is their failure to adequately teach esthetics or the elements of good taste. According to Sir William's view it is the ineptitude of imagination that is at fault in every great period. He calls to mind that no nation has yet grasped the essential fact that the arts and crafts should be allies in the creation of beauty and that this effort toward increased beauty should be applied to every manufactured item. It is no longer questioned that the teaching of art is of first importance and the object of such teaching would seem to be the education of future generations to a greater appreciation of beauty. Such appreciation would lead inevitably to the selection of the finer things in life, to increased efficiency and better citizenship. Moreover good taste has an economic value. It lessens the production of useless ill-conceived articles by putting an end to the demand for them.

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WEDNESDAY, NOVEMBER 18, 1908.

No. 1717



THE BEGINNING OF A STREET

OMBERSLEY, WORCESTERSHIRE, ENG.

The Skyscraper and the Street

By DAVID KNICKERBACKER BOYD, PRESIDENT, PHILADELPHIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS

ASIDE from all æsthetic considerations the continued erection of the so-called "skyscraper," the excessively tall building, constitutes a menace to public health and safety and an offence which must be stopped. Any further talk, therefore, of the one thousand foot building and the two thousand foot limit of possible height, or of projects for 60-story buildings as recently advanced with apparent earnestness, can but hasten the doom of these architectural protuberances. Enlightened public opinion will soon dominate the situation and as a matter of course ephemeral questions of construction, corrosion, earth pressure, wind resistance and all others concerning the "problem" will be swept aside.

In the present movement to correct the evil much has been said about shutting out the light of the heavens and circumscribing the air of the streets—to both of

which possessions the people are entitled, and which, "in the pursuit of health, happiness and prosperity," they should demand. This "canyonizing" of the streets is rapidly being accomplished and its baleful results are beginning to forcibly assert themselves. Even the possibility of disasters that may result from the human congestion of some of the streets—in the case, for instance, of an earthquake tremor, or an unusual explosion—has been hinted at, but without suggestion of adequate remedy, by relieving the streets themselves.

The phase of the question relating to the congestion of traffic has, it is true, attracted the attention of the public because the physical inconveniences are so pronounced and because all manner of trade is affected. This feature of the street situation has been considered by a Building Codes Revision Commission of New York City, who, I understand, have even recommended that



THE CLOSING IN OF PHILADELPHIA'S CITY HALL BY THE HIGH BUILDINGS ON BROAD STREET, WHICH IS THE LONGEST, IF NOT THE WIDEST, BUSINESS STREET IN THE COUNTRY.

vehicular traffic be suspended within certain limits and hours. To make the situation better this would first be making it worse, and would, at the most, be only a temporary expedient. But the root of the matter has not yet been reached—this is the regulation of the streets themselves.

And what are these streets? Are they not after all but the arteries of the city physical? The city beautiful has concerned us all. We have dealt with and even prescribed for the body politic—ought we not now to be treating the city physical which has so long been neglected.

Each of our overgrown though unequally developed cities has been increasing all the while—in bone and sinew—from the infant of a century or two ago to the giant of our own times. Each has, it is true, been developing a character and in some cases a charm distinctively its own, yet all this mass of growth is still nourished by the same blood vessels which, with but few if any changes, sufficed for its infancy.

To be sure our modern civic surgeons have made incisions and provided therein additional interior means of circulation, but in spite of these subways our cities are suffering from anæmia.

A few months ago I was quoted in reference to certain suggestions which I had made for restricting the height and area of buildings. At that time mention was also made of the scheme for offsetting or "stepping" the façades of buildings as they increased in

height. This scheme, which would undoubtedly admit more light and air to the streets below, and which has been advanced in one form or another at various times, is a part of the recommendations which the New York Building Codes Revision Commission has had before it for consideration. Such a scheme does not, however, offer any relief to the congestion on the streets, nor does it effectually place a limit on height.

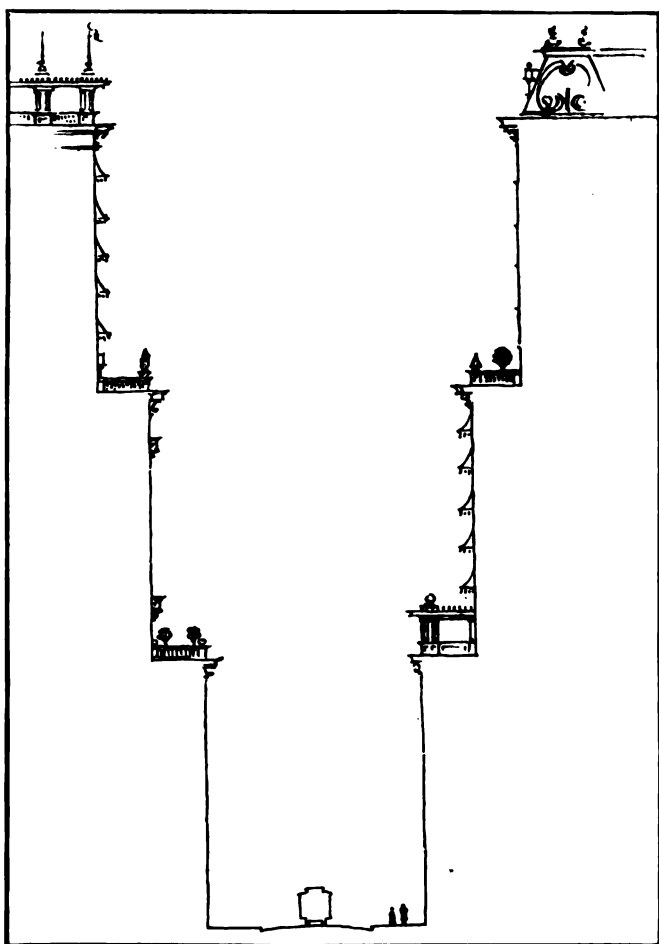
I am not prepared to say that an absolute limit of height would not be the ideal solution of the whole problem. The segregation and centralization of business activities would then be in a lateral instead of in a perpendicular plane. Centers of government, of art, of trade—and of the other component parts of urban life—would absorb entire sections of the city, crowd out the undesirable residential districts and drive the majority of the people from alleys, slums, and tenements into the outskirts, or suburbs, where they might lead a more healthful and rational existence. Should not this be the normal trend of our civilization?

Nevertheless I assume that in the further building up of our American cities the spirit of rampant commercialism will prevail to the extent that no flat, fixed and final limit of height for all buildings will ever be generally accepted.

This then would dispose of the question of a uniform cornice, or capping line. But the resulting irregularity of sky-line would produce a more picturesque



THE "CLOSING IN" PROCESS IN NEW YORK—LOOKING EAST ON LIBERTY STREET TOWARDS THE SINGER BUILDING.



A STREET SECTION THAT WOULD BE PRODUCED BY "STEPPED FACADES." THE STREET, HOWEVER, GAINS NO WIDTH.

effect, and under the scheme which I shall propose it would certainly be more co-related to the perpendicular facial treatment than to an absolutely continuous front. The much-to-be-hoped-for Art Commission of each city might, in addition, insist upon a distinct line of ornamentation, at a given height, such as moulded courses, a frieze, entablature or other similar treatment.

But even without an absolute level of height the tendency previously mentioned would obtain to a certain extent as, indiscriminate expansion in height being prohibited, increased lateral expansion will be bound to take place.

This is a very potent reason for curtailing the skyscraper "privilege" but one which brings it within the realm of political economy with which it is not my present province to deal.

Needless to say there would be no lack of light and air around the highest building in the world if it could be erected by itself or if not planted in too close proximity to another like it. When they are erected too close together a present day street is produced.

Since it seems that we must have high buildings let us be able to control them. Since we should have wider streets let us therefore make the height of the building and the width of the street interdependent, proportioning one to the other in such a manner that as the high buildings go up on the opposite sides of

the street they must be made to keep farther apart than the low ones.

In order to accomplish this twofold result I propose that the owner of any piece of ground who wishes to erect thereon a high building shall be compelled to dedicate to the city a portion of that property facing the street, for which, of course, the city would have to pay. This means that it is but taken over and paid for by the people who will have to use the street and who will also occupy the building. Any owner who contemplates erecting on any given street a building which by its very size and nature will attract more people and more business to that particular portion of the street than it can reasonably be expected to accommodate, or worse still than it actually will accommodate, should be made to furnish a somewhat adequate amount of space, or rendezvous, in front of it.

Of course the theoretical method for providing the increased width of streets and for supplying the additional amount of light and air would be to push back all buildings bodily till the streets were wide enough. Even were this possible of accomplishment it would work injustice to all owners whose buildings were low and who were not therefore contributing to the condition which would make such drastic measures necessary.

But the *modus operandi* of my proposed scheme would insure the modernizing of our streets without detriment to the interests of any individual.

I would limit the initial height, that is to say, the maximum height at the present regularly established building line, to one and a quarter times the width of the street. This would give, on a street fifty feet in width, a 62½-foot high building (if erected at the usual building line), which would be equivalent to a six-story building used for residential or office purposes, or a five-story light manufacturing establishment. On streets which were sixty feet wide, the height of the building, if erected on the normal building line, could be 75 feet, or just about one story higher. The buildings on the line, therefore, would be as high as the full width of the street plus one sidewalk, as the sidewalks of all these streets are usually about one-quarter the width of the street.



A STUDY IN SKY AND FRONT LINES
HIGH STREET OXFORD, ENG.



A STUDY IN SKY AND FRONT LINES
GRAND CANAL VENICE

But any building taller than this initial height must be so set back that the cornice or top of its perpendicular face shall not extend above an imaginary line which might be called the "building and height line." To determine this, consider a line which is the hypotenuse of a right angle triangle, the base of which is the width of the minimum sidewalk (or its equivalent) and the vertical side of which is the regularly established building line just mentioned as $1\frac{1}{4}$ times as high as the street is wide.

Now if this imaginary diagonal be drawn from the curb of any of these streets to the top of any building which is the limit of height on the normal building line and continued into space it becomes the line of restriction just mentioned. It is thus apparent that to go up one must go back. This scheme therefore forces the entire perpendicular face of the building back from the curb in a fixed proportion to each additional story the building may go up—which can roughly be figured upon as a two foot increase in the width of the sidewalk for each story above the initial height. Thus it also reduces the area of every building in proportion to every story in height, and while it does not absolutely prohibit high buildings, the loss of space entailed by this ever-increasing reduction will most effectually discourage their erection.

The operation of this scheme would be to automatically and surely, though gradually, accomplish the absolute reconstruction of our cities, each in accordance with its own particular impulses and requirements. Assuming that the moderately high buildings will occur chiefly in response to the law of supply and demand and therefore in the most developed quarters, it is not conceivable that the low buildings will remain for ever among the high ones, occupying space which has been made more valuable by the adjoining owners' inability to project their buildings to an inordinate height.

As each low building gives way to a higher one, some in five years from now, some in ten, some in thirty, the higher buildings will go back to take their places among their neighbors on the new line of progress, and *ipso facto* we shall have the wider streets where wider streets are needed. If in other streets no increase in population or occupation has taken place, naturally the high buildings will not have been erected, set backs have not occurred and the streets will not have been made wider because there was *no real need for it*.

It is obvious also that this process of evolution could be taking place in different parts of the same street at the same time. Thus the least used part of a street

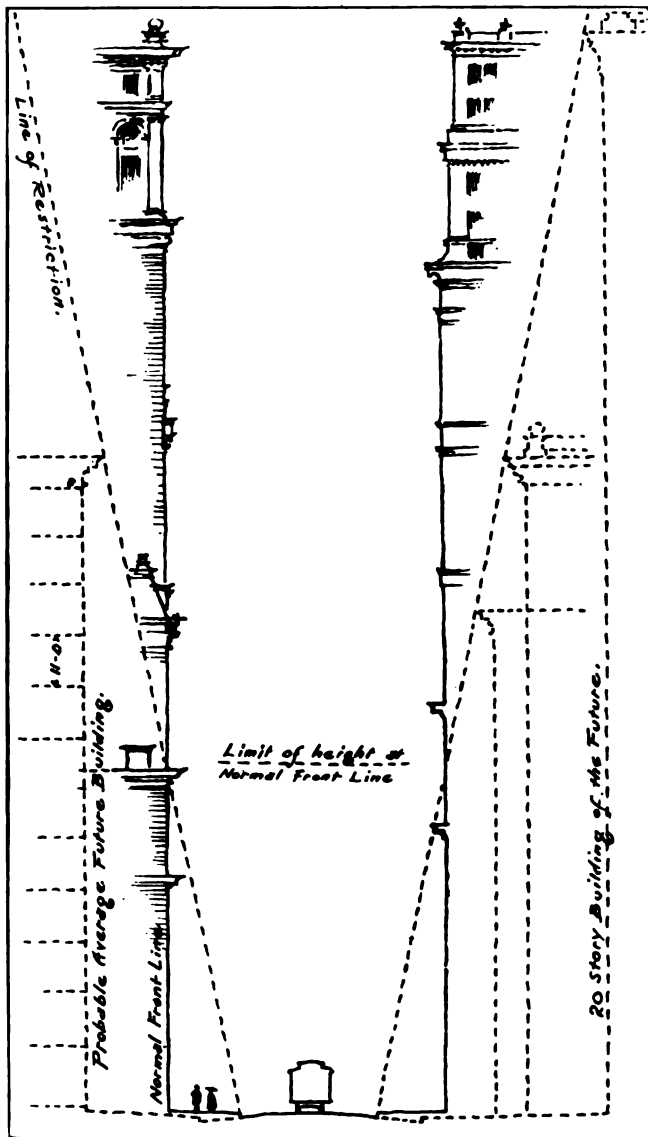
under prevailing local conditions might remain comparatively narrow while another portion would become built up and wider automatically.

This is only beginning to-day to care for the future. And if, for instance, the possibly irregular frontal line be deemed objectionable from an æsthetic or administrative standpoint it need be borne with by one generation only as a concession to the requirements of the next.

As an illustration of this fact let me describe what has actually taken place in the city of Philadelphia within the past twenty-five years or so. Even as long ago as that and much before the question of height had to be reckoned with, this very subject of widening streets was brought up. An energetic and non-partisan organization of public spirited citizens known as the Municipal League, headed among others by Mr. Joshua L. Baily (who is still living), was instrumental in having the City Councils pass an ordinance to increase the width of Chestnut Street, one of the principal business streets and a great thoroughfare, from fifty to sixty feet. How? By providing that all buildings altered or erected after the passage of the ordinance should be set back five feet behind all other buildings existing on the old line. What is the result? To-day, with a few isolated and therefore pronounced projections (which are but temporary and the speedy removal of which should be urged), the street is of a uniform



A STUDY IN SKY AND FRONT LINES
BROAD STREET, N. Y. LOOKING NORTH



SOLID LINES SHOW POSSIBLE SECTION OF AN OLD STREET AT THE PRESENT DAY. DOTTED LINES SHOW A FUTURE DEVELOPMENT.

width of sixty feet. And to-day these very men (who by their persistent efforts secured this boon for the city), and all other far-seeing citizens for that matter, are agreed that the street should be much wider than it now is. As a concrete evidence of this fact the plans prepared by the municipal authorities of Philadelphia for all new portions of the city disclose a sixty foot street as the general width, with the principal streets seventy and eighty feet—and these are now laid out across farm lands!

In the face of the great opposition which the original proposal for widening Chestnut Street had to overcome, and the lawsuits which threatened it, there was absolutely no hope for any additional increase at that time. Nor to-day would there be much hope for any proposition which did not look toward a *gradual* increasing of the width of the old streets with the compensation held out of the opportunity to go up by so doing where the others on the line must stay down.

I should have mentioned in connection with the widening of Chestnut Street that in two instances no buildings in two particular "blocks" were rebuilt, so

that, after the remainder of the street became the increased width, the presence of these two encroaching blocks was intolerable and they were by specific ordinance compelled to rebuild their front on the new line, for which the city paid the damages.

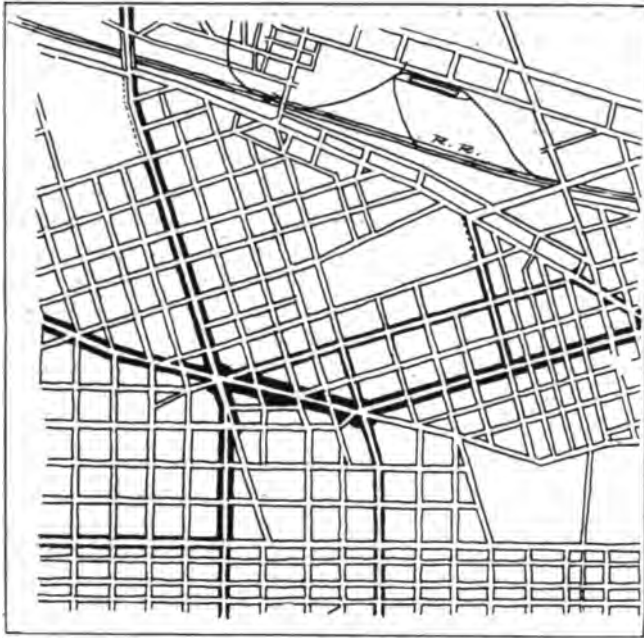
Similar arbitrary and fixed rules for the widening of other streets in Philadelphia as new buildings go up have since been provided for by ordinance, as in the case of one street, Walnut (which is rapidly changing from a residential to a commercial street). It is expressly stated that the widening process shall not at this time extend beyond a certain street, Twenty-second, and shall begin only above a certain street, Fifth—as below that the possibilities of its becoming congested have so far seemed remote. However, with subways, river tunnels and other transit facilities no man may prophesy what changes in a city map may rapidly be wrought.

Just before this writing the Town Council of Manchester, England, adopted new regulations making a clear distinction between "main" streets and others by stating that main roads must be fifty feet wide instead of thirty-six as heretofore, and providing that hereafter all new streets shall be at least six feet wider than the minimum width previously obtaining. The present width of the average street in our largest American cities, while not as great as it in most cases should be to provide for the business and traffic upon it, is nevertheless about adequate to care for the human contents of buildings whose height does not exceed five, six, or seven stories, according to the height of ceilings and uses.

This has led me to fix upon a height equal to one and one-quarter the width of the street at the normal



A STUDY IN SKY AND FRONT LINES
CHESTNUT STREET PHILADELPHIA, PA.



HEAVY BLACK LINES WOULD INDICATE STREETS WHICH HAD BECOME "MAIN STREETS" AND ON WHICH THE HIGHEST BUILDINGS WOULD OCCUR.

building line. Boston, alone, so far as I have been able to learn, of American cities has a limit of height, which is placed at two and one-half times the width of the street. London, Buenos-Ayres, Paris and other very large cities are not afraid of the land owners or builders or of the consequences to themselves and so do not permit of even this height nor more than a height equal to the width of the street, with certain exceptions. Indeed one prominent London architect has written me that he is in favor of the regulation proposed by Sir Christopher Wren which was that the buildings on opposite sides of the street should not, if laid flat on their faces, *overlap*—this would mean that they must be only as high as one-half the width of the street! This is of course entirely too low in our country. On the other hand in New York the Commission which has been considering the Revision of the Building Code has just reported to the Board of Aldermen and recommended a height of not more than 300 feet on certain of the widest streets and on streets less than 45 feet in width a height not to exceed 135 feet. How the times do change! And as to the height recommended by another committee for one-quarter of the area of the lot—there is nothing to stop the ascension but sky-pressure.

In closing I wish to say that while practical considerations have been my aim within the limitations of this short discussion I have not treated of many of the details connected with the problem, being at this time concerned exclusively with the major premise. The treatment prescribed for buildings on side and rear streets or for streets other than main highways where the same necessity does not exist for wider sidewalks or roadways has also been left for later discussion. That all walls of any building shall be entirely within the lines of the property it occupies and that every exposed side shall be treated "architecturally" is recommended but not here considered. That the expense of treating any walls exposed by an owner's

moving back shall be borne by the owner so doing is obvious and this rule obtains to-day. Whether these same walls should be treated for the time being in conformity with the newest or the oldest building is a matter for further reflection. These and many other features are minor points, which require separate working out.

The widening of the sidewalks on most streets, while easier of accomplishment, is more important in the first year of readjustment than the increasing of the roadway, though it is certain that within a generation or two the curbs will also be moved apart. There would be in front of tall or separated buildings, especially on boulevards and other avenues of this character, excellent opportunities for grass and "parking," even including trees. It would be possible also to provide for the introduction of balustrades, terraces, statuary and ornamental features for water, light, subway exits, entrances and ventilators, as well as for public conveniences and many other such artistic and practical necessities as our city authorities are wont to disregard. They can of course be excused to a certain extent for their failure to provide these facilities for they have fallen into the habit of not expecting to find space for them, and besides some of these are requirements of but comparatively recent significance in city development.

Our Civic Commissioners of the future will take heed of these opportunities with an eye to the practical, even in the utilization of electric illumination as a preventive of crime, that will astonish the "powers that be," who are even now beginning to realize the imperative necessity of remoulding the older parts of our cities to suit them to modern requirements.



CHESTNUT STREET, PHILADELPHIA, TWENTY-FIVE YEARS AGO, SHOWING HOW THE U. S. GOVERNMENT SET BACK THE POST-OFFICE TO PROVIDE ADEQUATE SIDEWALKS.



CORPORATION STREET BIRMINGHAM, ENG
A WELL PROPORTIONED STREET, THOUGH THE SIDEWALKS
MIGHT BE STILL WIDER.

With half an eye to the future it must be obvious that those cities will be wisest which most squarely meet the issue and soonest provide for their readjustment.

Recent Legal Decisions

PRACTISING WITHOUT A CERTIFICATE

In proceedings on habeas corpus by a person arrested, charged with practicing the profession of architecture without a certificate from the State Board of Architecture, the constitutionality of the act of the California legislature of March 23, 1901 (St. 1901, p. 641, c. 212), was passed upon by the Supreme Court of California. The statute provides that the State Board of Architecture appointed, under the act, by the Governor of the State, shall grant certificates to practice upon an examination of applicants therefor, and that the board shall "formulate and adopt a code of rules and regulations for its government in the examination of applicants," and makes it a misdemeanor, punishable by fine, for any person to practice in the State without a certificate, with the exception, that any person may make plans for his own buildings or furnish plans for other persons provided he inform them that he is not a certificated architect. The statute was held not to be in violation of the Constitution of the State as granting special privileges and immunities to some of the class which were not granted to all. It was also held that the act was not void because the legislature had provided no standard of proficiency nor prescribed any rules under which the qualifications of an applicant could be determined. If the board should adopt rules which were not uniform, or which were discriminating

or unreasonable, that would not invalidate the act; it would simply be a violation of its provisions, since it is implied in the grant of authority to the board, although not expressly stated in the act, that the power shall be exercised reasonably and fairly. The remedy for such a violation of duty by the board would be by an application to the court under some proper proceeding for relief. The legislature itself is not obliged to fix the standard of excellence or knowledge which the applicant shall be required to possess, but may leave such requirements to the sound discretion of the board, which will be accountable in the courts for any abuse or unjust exercise thereof.—*Ex-parte McManus*, Supreme Court of California, 90 Pacific, 703.

COMMISSION CONTINGENT ON CONTRACT BEING MADE

Where an owner employed an architect to draw the plans and specifications for a house which the former proposed to have erected, and also to superintend the construction, in the event a contract for the construction should be made, the owner to pay the architect for such superintendence 5 per cent. on the amount of the lowest bid received, the owner was held not liable in the event of his failing to get a satisfactory bid and constructing the building himself.—*Loftus v. Green*, Court of Texas Civil Appeals, 104 Southwestern Reporter, 396.



ST. PAUL'S CHURCH, N. Y., AND THE ST. PAUL AND PARK ROW BUILDINGS. THE DESIRABILITY OF TREATING ALL SIDES ARCHITECTURALLY IS EVIDENT

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The work of Oswald C. Hering, Architect (8 pages).

Additional:

Terrace and garden views, house of Butler Sheldon,
Esq., Columbus, Ohio.

WITH the uncertainties incident to a presidential election disposed of, it would seem that the last obstacle in the way of a complete resumption of normal or even greater building activity had been disposed of. In fact while it is not, perhaps, surprising that a good many projects partially formulated have been held over until after election, there can scarcely be any doubt that with conditions as they are at present and the possibility of changes, that would appreciably disturb them remote, a period of unprecedented building activity is imminent. We can scarcely hope, however, that the present unusual opportunities for economical and safe investment in building enterprises will continue indefinitely. The inevitable demand affecting both labor and material will unquestionably increase the cost of building very shortly, and to those who are prepared to promptly take advantage of the favorable conditions now existing, will the greatest reward be given.

THE insistent need of further study and consideration before taking definite action on the report of the Building Code Revision Commission designed to regulate the height of future New York buildings was amply demonstrated at the public hearing held before the Board of Aldermen, November sixth. Almost without exception the speakers were opposed to the hori-

zontal limitation of heights recommended by the Commission, and while there were differences of opinion evident as to details, it might be said that the plan of terracing back both from street and lot lines appeared to be favored by the majority of those present who were prepared to commit themselves. Elsewhere in this issue is presented a concrete expression of this plan of construction as developed by Mr. D. Knickerbacker Boyd. Unquestionably there are many attractive features to the scheme, and that many of the almost intolerable conditions fostered by the present laws which practically permit unrestricted building in New York would be remedied by its adoption in some form is undeniable. However, we are inclined to agree with one of the speakers at the recent hearing who stated that he considered the subject so important that it should be threshed out fully and completely, even if it required ten years to do so, to the end that the final solution prove adequate and satisfying. While it would probably not be difficult to select from among the plans already suggested that one offering the wisest solution of the problem, it is by no means certain or even probable that further study and consideration will not result in the development of a plan offering greater relief and exacting fewer penalties than any yet proposed.

WHAT would appear to be a most important extension of the structural materials investigations which have been carried on by the Government for several years has recently been determined upon. These investigations, as is generally known, have had for their object the determination of the nature and extent of the materials available for use in the construction of Federal buildings and the manner in which they can be used to obtain maximum efficiency. The proposed extension in this work will include investigations of clays and clay products undertaken by the United States Geological Survey, Technological Branch. The ever-increasing scarcity of wood renders self-apparent the fact that at no distant day a substitute for this most useful material of construction must of necessity be produced. With this necessity in prospect the investigation of clay products is about to be undertaken, and the results will be awaited with keen interest. A full investigation of this material will undoubtedly embrace a consideration of manufacturing problems and it is to be hoped that greater perfection will be made possible by their solution. While there exist beyond question many and undeniably great advantages peculiar to clay products as materials of construction, there have been noted from earliest times certain defects, whose presence can scarcely be detected before use of the material, and the effects of which are ruinously injurious. Probably efflorescence appearing on brickwork has caused more annoyance and expense and marred the appearance of more structures than any other one defect of the material. If the government experts succeed in infallibly overcoming this fault or imperfection without unduly increasing the cost of the material great benefit to the clay products industry will inevitably accrue, and if some form of the material were evolved that could fairly be considered a substitute for wood, the result would be little less than revolutionary.

THE AMERICAN ARCHITECT AND BUILDING NEWS

Vol. XCIV.

WEDNESDAY, NOVEMBER 25, 1908.

No. 1718



The New Terminal Station at Chicago of the Chicago & Northwestern Railway

BETWEEN Kinzie street and Madison street, Clinton and Canal streets, some fifteen acres will be occupied by the tracks and station of the new passenger terminal at Chicago of the Chicago & Northwestern Railway. The magnitude of this important addition to the architectural features of Chicago, and which it is estimated will cost completed upwards of twenty million dollars, can best be realized from the following statement of area.

The area of the basement floor exceeds two acres, the street floor almost as much, while the train shed covers a surface six acres in extent. It will thus be seen that the space devoted to public use comprises an area ten acres in extent.

This new terminal occupies practically four city blocks, and passes over the intersecting streets, Washington and Randolph, by means of viaducts.

The general ground plan calls for an elevated terminal reached by two elevated approaches of four tracks each, and a train shed 840 feet long and 320 feet wide, that will contain sixteen tracks, each with a capacity of fifteen cars.

The approaches will, in addition, embrace some 30

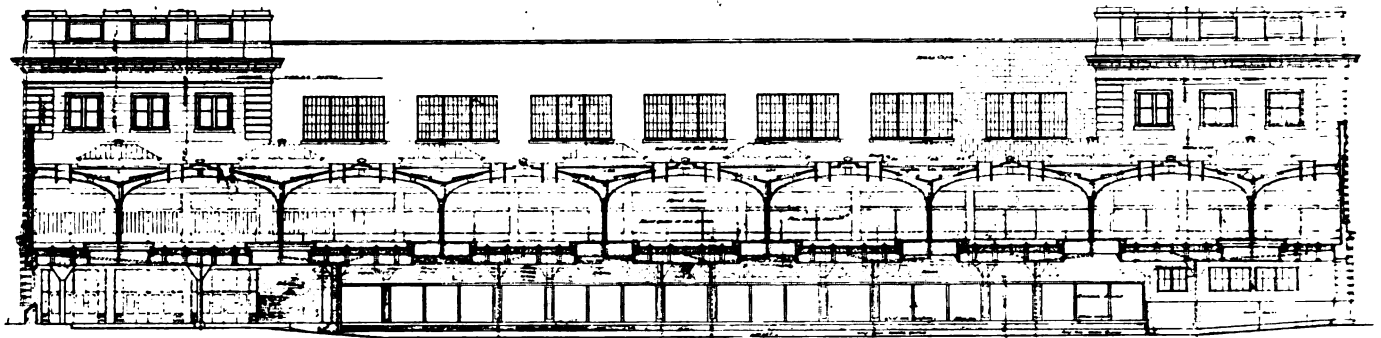
acres of ground, equally divided between the north and west approaches.

To clearly understand the plan of this terminal, it must be borne in mind that there are three floors devoted to the handling of passenger traffic. The street level, the train shed level, and above this a third floor containing the several features now recognized as important and necessary in the modern railway station.

Through the lofty portico of the main entrance on Madison street, the traveler enters the vast concourse on the street level. This concourse, where all the business for travel is conducted, is 100 feet wide by 250 feet long.

Surrounding this concourse are the usual groupings of ticket offices, baggage rooms and other conveniences necessary to the traveling public.

An important feature is the segregation of passenger traffic. In addition to the concourse for through traffic, there is a suburban concourse in the center of the station on the street level which extends from Canal to Clinton streets. This important feature prevents the confusion and annoyance that exists in large terminals during the so-called "rush hours" of suburban traffic, and avoids all inconvenience to the through passenger.



SECTION THROUGH TRAIN SHED

LOOKING TOWARD CONCOURSE

The emigrant traffic, which forms so large a part of the passenger transportation of railways centering in Chicago is equally well provided for. Ample space has been set aside for the emigrant traveler, who finds a clear, well-lighted space, with tiled floors and enameled walls, with a waiting room, restaurant and other necessary features.

On the second floor, or train shed level, is the marble-lined main waiting room, one hundred feet long by two hundred feet wide. This room has a barrel-vaulted ceiling eighty feet high.

One of the interesting architectural features of this terminal is the Washington street subway, where the structure crosses the street. At this point the street, originally 80 feet wide, will be increased in width to 120 feet.

This subway will be lined with white enameled tiles, will be brilliantly lighted, and owing to its architectural treatment forms an important feature of the terminal. The portals to this subway will be in the form of granite arches, treated in a monumental way. The problem presented to the architects in the planning of this structure was to provide for the inevitable expansion of traffic and to meet a growth of business that was sure to follow. The capacity of the present station on Wells street is but 50,000 each twenty-four hours. To-day this is entirely inadequate, and the consequent confusion taxes every resource of the railway officials. The new structure will be able to care for a traffic of 250,000 each twenty-four hours, and will thus afford ample facilities for many years to come.

The architectural treatment of the train shed, which will be 840 feet long, and extending over three city blocks, is interesting.

To shut from view the monotonous expanse of the long train shed roof, a well-designed curtain wall forty-eight feet high, of brick and granite, will be erected, and will include in its treatment the portal of the Washington street subway. The exact designs of this curtain wall cannot just now be shown, but it is safe to say that the architects, Messrs. Frost and Granger, will accomplish a result that will be a good example of artistic and novel construction. Behind this curtain wall the train shed, with its sixteen tracks, as previously described, will be covered with a "Bush" roof. This roof, over each pair of tracks, will be broken by a concrete duct, so placed that the exhaust from the locomotive stacks will exhaust into the open air.

The general architectural treatment of the exterior is clearly shown in the illustrations herewith. It presents a dignified and well proportioned ensemble. The general scheme of construction of this, the next largest terminal station in the United States, combines every present, modern requirement and anticipates as far as human foresight can the requisite for a railway station for some years. With a present daily traffic of more than three hundred trains, the organization and government of so vast a business needs every facility to make it efficient. This we believe has been secured.

In a structure of this magnitude, the questions of sanitation, light, heat and ventilation are most important.



PERSPECTIVE VIEW

CANAL STREET ELEVATION

All portions of the building outside of the main waiting room will be heated by direct radiation. The main waiting room is to be both heated and ventilated by a fan system delivering air to the room through bronze grilles in the bases of the columns on the north side. The vitiated air will be drawn off by fans through ducts over the ledge on the south side. The heating of this room is also supplemented by means of direct radiation placed at the rear of the columns on the south side. To meet and overcome the natural fall of cold air from the roof and upper windows of the main waiting room, direct radiation will be installed along the cornice ledges.

All entrance vestibules on first floor are to be heated by a hot blast fan system. The chief benefit of this is that the cold air entering through the outside doors will be tempered before entering the main business office on first floor, which will be heated and ventilated by the fan system except that direct radiation is to be employed inside the entrance doors on Madison and Canal Streets.

The vacuum system of heating will be installed, using the exhaust steam from the engines in the power plant located in the block bounded by Lake and Clinton streets and Milwaukee avenue. The steam pipes will be carried through suitable tunnels.

Heating and ventilation will be provided for all occupied space between the terminal station and Lake Street below the elevated tracks. This includes the suburban concourse, which in addition to being heated by direct radiation will be thoroughly ventilated. This same treatment is to be given to the immigrants' quar-



INTERIOR JEWISH SYNAGOGUE
BOSTON, MASS.

C. H. BLACKALL
ARCHITECT

BOSTON ARCHITECTURAL CLUB EXHIBITION

ters and baggage and express rooms. Lamps of suitable candle power will be arranged in such a manner as to illuminate the ceiling and there will be enough reflected light from this ceiling to properly illuminate the floor. The special seats to be designed for this room will have concealed lights above them to afford light for reading.

In the main entrance vestibule on Madison Street there will be three ornamental chandeliers. The effect of these will be to illuminate the vestibule and to cast light through the large windows to give a diffused background to the columns. On the posts at the head of the stairways at either side of the main vestibule will be placed bronze standards so arranged that the lights will be on the same level as these chandeliers.

The concourse will be lighted by incandescent lamps on chandeliers, and the train shed by incandescent lamps with special shades. The lamps will be placed on the lower members of the steel work between the columns which are in the center of the platforms. The lighting of the train shed will be similar to the Washington and Lackawanna terminals.

Underneath the tracks, both incoming and outgoing baggage rooms, mail rooms, express rooms, suburban concourse, the cab and the automobile stands and immigrants' quarters are all lighted by incandescent lamps. Provision will also be made for heating and lighting all trains standing in the train shed.

In the sub-basement of the terminal station building where the auxiliary boilers will be placed there is to be a refrigerating plant which will supply brine for cooling off all refrigerators and boxes and will also cool all the drinking water which will first be passed through special porcelain lined filters. In the same



THE GREAT LAKES

LORADO TAFT, SCULPTOR

BOSTON ARCHITECTURAL CLUB EXHIBITION



INTERIOR
BOSTON ARCHITECTURAL CLUB EXHIBITION

W. G. RANTOUL, ARCHITECT



INTERIOR
BOSTON ARCHITECTURAL CLUB EXHIBITION

W. G. RANTOUL, ARCHITECT

room will be placed the apparatus for the vacuum sweeping system with which the terminal station is to be equipped. Here, too, is located the water heating plant for supplying hot water at all basins throughout the building and all kitchens. It is expected that a hydraulic elevator system will be installed. The pumps for this will be located in the basement, steam being delivered directly from the power house.

It is particularly interesting to note that in this plant there will be installed one or more exhaust steam turbines which will be used for driving generators. The combination of exhaust steam turbines with reciprocating engines will permit a higher efficiency than can be reached by other types of prime movers.

The boiler plant will consist of six 500 horsepower units and space has been provided for three additional or a total of 4,500 boiler horsepower at nominal rating. A stack about 10 feet in diameter and 22 feet high will be used thus making unnecessary either induced or forced draft. In the engine room space is provided for four vertical cross compound non-condensing engines, three of which will be installed at the present time. These will be direct connected to generators for furnishing electricity for light and power.

In addition to the other rooms already mentioned ventilation will be provided for the kitchens, lunch counters, dining-room and women's room, and on the

upper floors the tea room, women's retiring room, barber shop, etc. Special independent exhaust ventilation is to be provided for men's smoking rooms and all public and private toilets.

Practically all the lighting will be by means of incandescent lamps. Outside the Madison street front will be four bronze standards. These will light the sidewalk. Along the curb line of Canal and Clinton Streets, from Madison to Lake Street, there will be a number of standards supporting clusters of incandescent lamps. In addition bracket lights will be placed at every column under the marqueses at each entrance and also wherever streets cross. The three subways at Washington, Randolph and Lake Streets will be lighted by incandescent lights distributed so as to give a uniform light without glare. It is also contemplated installing searchlights above the train shed.

The ticket office or main business room will be lighted by direct illumination. There will be four ornamental standards on the columns at the top of the stairway leading from the ticket office to the main waiting room. At either end of this room will be specially designed bronze standards. This will be the only visible lighting in the room other than chandeliers which will be hung at both the north and south ends of the room between the columns. All visible standards and chandeliers will be in strict harmony with the architectural design.



A COUNTRY HOUSE
BOSTON ARCHITECTURAL CLUB EXHIBITION

THOMAS, CHURCHMAN & MOLITOR, ARCH'TS



RESIDENCE
BOSTON ARCHITECTURAL CLUB EXHIBITION

H. B. RUSSELL, ARCHITECT



LIBRARY INTERIOR
LITTLE & BROWN, ARCHITECTS
BOSTON ARCHITECTURAL CLUB EXHIBITION

of subjects that have been completed possibly as far back as 1903, seem lacking in dignity of presentation and in a measure out of place in a 1908 exhibition.

This exhibition is to be viewed throughout the three lower floors of the clubhouse. No attempt at decorative treatment has been made, and there is nothing to attract attention from the exhibits that line the walls. In the groupings, probably, the best possible arrangement has been used, but we incline to the belief that where material is shown covering large frames, a single gallery offers the best opportunity for study and comparison. The white on black prints of working drawings present a decided novelty, and when placed, as some of these exhibits must necessarily be, in poorly lighted corners, are very effective, and a pleasant change from the usual black or white methods.

Grouped in a small room on the second floor are a number of water colors of architectural motives. While some of these are well done, candor compels the statement that most of them show a poor acquaintance with the possibilities of this medium, and while the subjects are of sufficient interest their portrayal lacks considerable of artistic presentation.

In an adjoining room is a font, carved in oak, and intended for a memorial church. The visitor will profitably spend much time in a close examination of this beautiful work. This font, standing approximately nine feet high, is executed with the rarest skill, and the whole is an artistic gem.

In the billiard room is shown an elevation of the main façade of the Union Theological Seminary, now in course of erection in New York City, and two draw-

THE ANNUAL EXHIBITION OF THE BOSTON ARCHITECTURAL CLUB, NOVEMBER 7 TO 28.

The measure of the value of any exhibition would seem to be largely in its educational possibilities. To accomplish this an exhibition should present some record of progress, should show advance, if there be any, in the presentation of subjects as far as possible entirely new. That the exhibition of the Boston Architectural Club, now open in the club rooms at No. 2 Ashburton Place, does not present this feature, except in a limited way, we believe must be conceded. The material shown by resident members of the club is a record of something done. In spite of the handicap presented by a number of small exhibition rooms, and scattered method of hanging and arrangement, if one takes the trouble to search for it one may find material of much interest. But of the material sent from other cities it does not appear that the Boston Architectural Club, in the person of its exhibition committee, has received the consideration to which it is entitled. Whether these out of town contributors are saving their best work for subsequent and perhaps larger exhibitions, or whether they feel that recently constructed work is less fitting than earlier subjects to represent them, we of course cannot judge. But the fact is evident that there are many exhibits that have been seen in a number of former exhibitions. No criticism can be made as to their architectural excellence, but much worn frames and soiled and disfigured mounts, treating



DINING ROOM INTERIOR
LITTLE & BROWN, ARCHITECTS
BOSTON ARCHITECTURAL CLUB EXHIBITION



TEMPLE IN A FORMAL GARDEN LITTLE & BROWN, ARCHITECTS
BOSTON ARCHITECTURAL CLUB EXHIBITION

ings showing two different schemes for a proposed soldiers' monument at Canandaigua, N. Y. These are worth close study; but in the case of the seminary exhibit, which is at least eight feet long and hung close up to the ceiling, it is not possible to see it well enough in the limits of the room.

The detailed drawings of half sections of churches at Norwood, Mass., and Somerville, Mass., are important additions to church architecture in this country, and their manner of presentation we are sure will appeal to the student who visits the exhibition for instruction.

The steady progress being made in the designing of the country house is further emphasized by this exhibition. Perhaps this feature is the most interesting of all. A few years since the architect who had a client inclined to heed his advice and admonition as to the interior furnishing and fittings was rare. The increasing tendency to entrust the furnishing and fitting as well as the design of the house to the architect is most gratifying. It is a pleasure to note the many photographs showing well designed interiors, and what is of equal importance well selected and designed furniture.

The theory of the client that the interior of the house represents and mirrors his home life, and that he has the right to gather about him such furnishings and furniture as suits him best, while perhaps true enough from his point of view, was most unfortunate, and is now happily passing. The number of well designed and carefully planned houses that have had their undoubted artistic qualities completely negated as far as the interiors were concerned by impossible furnishings is deplorably large, and the new order of things which places this work largely in the hands of the architects represents in effect an expression of higher artistic appreciation on the part of the public that is most welcome.

The collecting and arrangement of an exhibition of this size involves a great amount of time and labor on the part of individual members, particularly at this season, when architects are busily engaged with their office work.

That so important a lot of work has been collected and shown is evidence of the activity of the Boston Architectural Club and an unselfish devotion to the cause of good architecture.

It is to be hoped that much of the new material may be seen in New York and Philadelphia, and it is equally desirable if the particular exhibits referred to at the outset are to be further shown, that they be cleaned and somewhat rehabilitated before that time.

It was hoped that the subject of municipal improvement, which has received so much careful study and gratuitous service at the hands of the profession, would be well exhibited. The matter shown is of much interest, but the volume is small.

The suggested improvement of Copley Square, shown in two schemes, and a rearrangement of the Park Square district are carefully considered ideas, well worked out, and should attract attention to these sections and emphasize the necessity for action on these needed improvements.

Other exhibitions along the line of municipal im-



MEMORIAL CLOCK TOWER GUY LOWELL, ARCHITECT
BOSTON ARCHITECTURAL CLUB EXHIBITION

provement are the proposed Boston Public Dock System and the termination of Grand Boulevard, at Chicago.

The catalogue of this exhibition is a splendidly gotten up book, and should be worth keeping in the architect's library. The character of the illustrations and the typographical work reflect great credit on the committee which had its preparation in charge.

We are indebted to this committee for permission to reproduce the accompanying illustrations which are shown on a much reduced scale to meet its wishes.

Recent Legal Decisions

RECOVERY ON QUANTUM MERUIT WHERE BUILDING IS ABANDONED

The plaintiff offered to render complete architectural services, including supervision, and all the work usually done by an architect for the sum of 4 per cent. on the cost of the work (or 2½ per cent. for the plans and specifications), to be paid in installments of 4 per cent. of the amount paid to the contractor as the work progressed. This was agreed to by the defendants who, however, postponed the commencement of the work on account of the unsettled condition of the labor market and two years after the contract was entered into notified the plaintiff that they had abandoned the idea of going on with the work at all. The court held that the abandonment of the work put an end to the existence of the special contract and it could not be interposed by the defendants so as to bar a recovery by the plaintiff of the reasonable value of the services rendered by him in the preparation of plans and specifications, etc., prior to the abandonment. The fact that the defendants retained the plans and results of the plaintiff's labor without offering to return them was held to be an admission of the receipt by them of some benefit from the plaintiff's labors.—*Stephen v. Camden & Philadelphia Soap Co.* (Court of Errors & Appeals of New Jersey, Nov. 18, 1907), 68 Atl., 69.

EMPLOYER MUST ACCEPT OR REJECT PLANS IN TIME

If plans and specifications are completed and presented to a person at his request, it becomes his duty either to accept or reject them at the time, before he starts upon the work of construction, after which he cannot be heard to say that he did not like them.—*Bennett v. Greenwood*, Supreme Court of Michigan, 114 Northwestern Reporter, 1019.

WHAT AMOUNTS TO PREVENTION OF SUPERVISION OF CONSTRUCTION

In an action for preparing plans and specifications and supervising the construction of a building the plaintiff pleaded that he was prevented from supervising the construction by the action of the defendant. There was no express testimony of such prevention, but the plaintiff testified that the defendant "took upon himself the letting of contracts;" that he thought "his judgment better than an architect's;" that he "supervised this job;" that his "capacity was practically that

of supervising architect. He was there all the time bossing the construction and the men and the contractors." The court held that if the jury believed this testimony to be true the defendant certainly prevented the plaintiff from supervising, and the jury rendered a verdict for the plaintiff which was affirmed on appeal.—*Bennett v. Greenwood*, Supreme Court of Michigan, 114 Northwestern Reporter, 1019.

WHERE COMPENSATION IS NOT CONTINGENT ON COST

Upon the question at issue whether an architect's compensation was contingent upon the building costing not more than a certain sum, if the employer before he began to build knew or should have known that the building would cost more, the compensation could not be considered as conditional.—*Bennett v. Greenwood*, Supreme Court of Michigan, 114 Northwestern Reporter, 1019.



DETAIL FONT, MEMORIAL CHURCH
FAIRHAVEN, MASS.

BRIGHAM, COVENEY
& BISBEE, ARCHITECTS

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AN architectural exhibition, not unlike an architectural journal, is largely dependent upon the profession not only for its success but for its very existence. Without the support and co-operation of capable men in active practice it will inevitably become of small interest or value, and in a measurable period of time cease to be a factor among present means of architectural education. Again, those in charge of an exhibition may have the active good will and assistance of a great many men in the profession, but if little work of importance has been done during the year, due to financial depression or other causes, it is obvious that much that is new cannot be shown. And so it would seem that before criticising adversely, inquiry into the causes and conditions governing an exhibition would be demanded by a sense of justice. It is probably true that the function of an annual exhibition is to record the progress of architecture during the year, and by presenting for study the best examples of the year's work serve an educational purpose as well, but if perchance during any twelvemonth small work has been accomplished it can scarcely be the fault of the exhibition committee, and unless the gallery walls are to go bare it becomes necessary to avail of some material neither new nor of especial interest.

MUCH information of a somewhat general character, although all pointing to the inevitable conclusion that the cost of building is exceptionally low, has been available for some weeks past, but specifically what this reduction amounts to has not in most instances been apparent. Various estimates have been made of

what the probable cost of certain current operations would have been if undertaken some months ago, and of equal interest are the calculations submitted tending to show that the buildings completed last year could now be duplicated for a sum much less than that which represented their cost when erected. These figures, however, would seem to have only a theoretical value, which, of course, may vary considerably from the actual, and as this is indeterminable we are left in some degree of doubt. It would therefore appear to be of timely interest and value, as calculated in a measure to dispel this doubt and uncertainty as to the actual decrease in the cost of building in New York at the present time, to record an instance which offers indisputable proof not only of this reduction but an accurate measure of its amount. It seems that in the early part of the present year plans and specifications were prepared for a warehouse to be erected in this city, and in June tenders from contractors were invited. For some reason which is not material to our investigation, the project was temporarily abandoned. About the beginning of November tenders were again received, and although there had been no change whatever in either plans or specifications we are advised that the estimates received last week ranged 25 per cent. lower than those submitted in June. If approximately equal reductions in the cost of buildings of all classes obtain, it is not difficult to understand why those who have money to invest in buildings are preparing to invest it now.

WHILE probably there is not another city in the world where there is apparent less sentiment or feeling in favor of the preservation of landmarks than here in New York, we venture the opinion that few will learn of the proposed removal of Madison Square Garden without a feeling of sincere regret. We are not rich in architectural monuments, and although the Garden may lack some of the dignity and forfeit some of the reverence that age alone can command, it has been so intimately associated with the social and political life of the city since its erection some twenty years ago, and is withal so wholesome to look upon that its passing can scarcely be viewed with equanimity. Moreover, its demolition would leave the city without adequate accommodations for conventions and the larger public exhibitions. Of course, the necessity of the owners receiving some return on their investment is recognized, but with an unquestionable demand for a building containing at least a large percentage of the accommodations provided by the Garden it would seem that some plan might be devised, even though it called for some further outlay, that would increase the earning capacity sufficiently to in a measure meet this requirement. It has been suggested that the location is not ideal, but notwithstanding the undeniable drift of population and amusement centers northward, we are not forced to the conclusion that Madison Square will be inaccessible or especially inconvenient for New Yorkers within the present generation. Unless indications are outrageously misleading, Fourth Avenue between Fourteenth and Forty-second Streets will be practically rebuilt within the next decade, and the character of these improvements will not be such as to conflict with the interests of the Garden property, located midway on the avenue.

THE AMERICAN ARCHITECT AND BUILDING NEWS

Vol. XCIV.

WEDNESDAY, DECEMBER 2, 1908.

No. 1719.



REAR VIEW

"STENTON"

Sauntering in Colonial Byways

By VALENTINE B. LEE

WILLIAM WINTER, the dean of the dramatic critics in America, in a charmingly written volume, entitled "Gray Days and Cold," tells of his saunterings throughout England while visiting its literary shrines. Sauntering is a delightful recreation, best pursued when man with advancing years grows thoughtful.

Thoreau tells us that the word sauntering is derived from the custom of French Pilgrims, who replied to the question of whence they were journeying—"a la sante terre," or, to the Holy Land. Thoreau's works proclaim the saunterer at his best, and represent the ability to saunter as an accomplishment possessed by few. To walk about out of doors, to visit the scenes of historic incident and to become thoroughly imbued with the "atmosphere" of one's surroundings may be truly viewed in the light of an accomplishment.

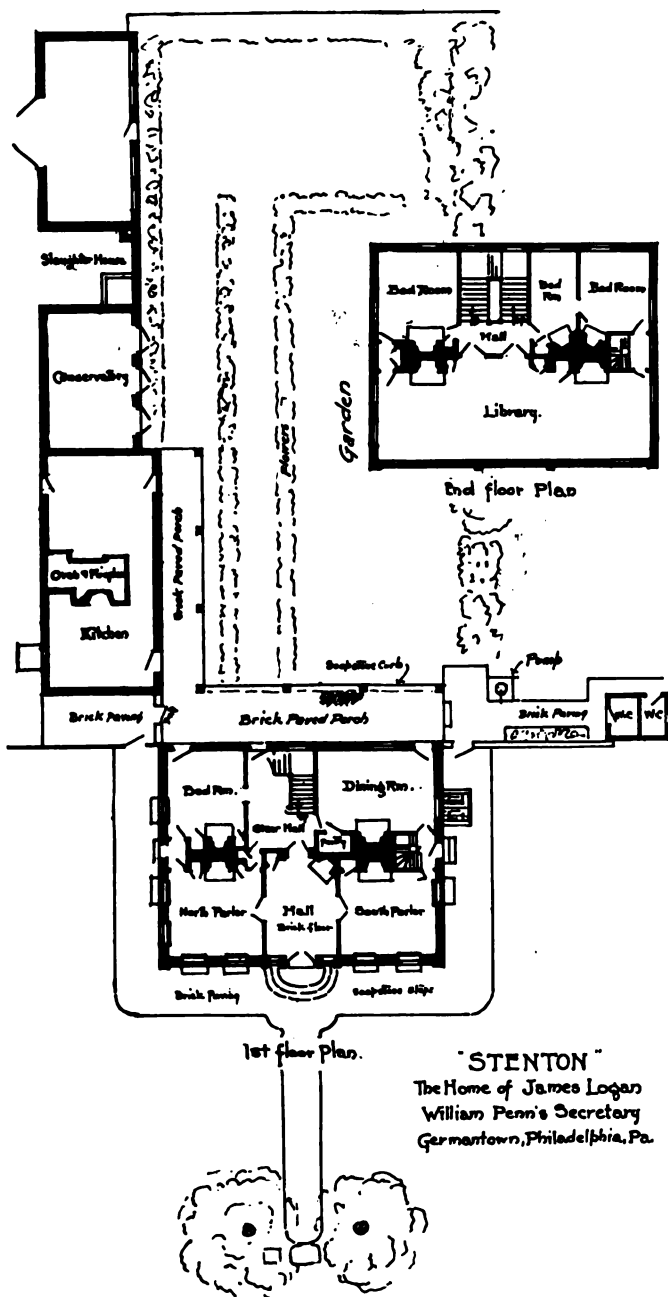
The architectural student, thoroughly appreciative of the beauty of the Georgian as found in this country, and who is fortunate to combine with it a fair knowledge of our Colonial history, can visit many localities

over that wide area that had for its theater the scenes of the war for independence, and find much to compensate him. It matters not if he wanders along the quiet banks of the Concord or over the undulating hills of Lexington. He may stand on the heights of Ticonderoga and in his mind's eye see the flotilla of Benedict Arnold on its way to the North and to failure, or picture to himself the stealthy approach of Ethan Allen and his brave companions in their successful attempt to capture the old fort. Or on that beautiful slope at Newburgh, where Washington dwelt in headquarters and where one of the most affecting meetings with his officers took place, and where the Hudson sweeps far to the north and south, as viewed from the low porch of the headquarters building that crests the brow of the hill, find compensation for his journeying.

Even in that hive of commercialism, New York, he will find well marked traces of colonial days, while Boston and Charleston and Annapolis, with more veneration for historic association, have preserved much of colonial buildings for study and admiration. And

when the saunterer in his wanderings has arrived at Philadelphia he feels that he has reached the goal he has long sought.

It is not in the city itself, so replete with historic association, where the military held sway and the politicians shaped the destiny of the country, that interest solely centers. Suburban Philadelphia has perhaps in the neighborhood of Germantown more good examples of the manorial type of house than any other locality.



Here the rich and influential grouped their houses, and this locality preserves in a greater measure than any other the appearance of early Colonial days.

It is through its winding streets and lanes and across its undulating fields one may profitably saunter.

To describe in detail all that may be viewed with interest in this locality would greatly exceed the limit of this writing, but to guide the interest of the architectural student we will briefly review this historic

neighborhood and ask him to accompany us on a visit to four of the best examples of the Manorial Georgian to be found in this section, all of them, more especially the Chew House, important landmarks of Colonial history.

Of course the inroads of business have encroached on the colonial houses, and one after another they have given place to more "modern" buildings, and others are so disfigured with "architectural" (?) additions and embellishments that the original grace and dignity are almost entirely lost.

On the outskirts of town a number are in possession of the original families and some have been taken over by societies with the object of preservation.

Along Germantown Avenue or Germantown Road as formerly called, there are numbers of old colonial houses, as it was the main thoroughfare from Philadelphia to its then principal suburb.

The first one we come to is just above Wayne Junction Station on the Reading Railway.

"Stenton," the home of James Logan, Secretary to William Penn, built in 1727, on a farm of several hundred acres. The plan of this house is interesting, as all rooms are quite accessible and the more important have small doorways or means of escape to main stairs or back stairway. The house was well fortified with heavy solid paneled inside shutters which have heavy bolt bars. The back stairway reaches from roof to cellar, being shut off from the remainder of the house by doors. From the cellar runs a curious underground passage formerly connecting with the stables and barn, giving safe ingress and egress in time of siege. The entire second floor front was originally one large room made to accommodate Logan's valuable scientific library. Wherever there was an empty space there a closet was placed, so that there are about three dozen in the house. In the cellar are the wine room and beer vaults where the good Quaker kept his home-brewed beverages, the beer vault being under the hall which is paved with a brick floor.

The entrance hall opens on right and left through double folding doors into large parlors on each side, and directly in front as you enter through a folding door into the main staircase hall. There are fireplaces in all the first door rooms including the hall. The combination of chair rail and baseboard with plaster between and paneled wood seats at every window with molded cornices and wood mantels produce a most satisfactory effect.

The house is now maintained by the "Colonial Dames of America," and in it are several original pieces of furniture belonging to Logan.

The outbuildings, as connected to the house, make a beautiful group, among them being the greenhouse of its time, a high storied building with double casements from floor to ceiling facing the south, shingle roof and no openings on the north side.

The next house of interest is the Armat Mansion on a hill to the left on Germantown Road. This is a curious old house, the main roof being a gambrel gable on the west side and a hipped gambrel to the east of the large pediment porch.

It is a well preserved and dignified house, and although not of the earliest type of the Colonial, is evi-



PORTICO

ARMAH MANSION

dently a copy of some of the Virginial Colonial houses of about the time of Thomas Jefferson.

Proceeding north we pass the Wister house and numerous others built along the main highway. These are semi-city houses and have no porches or front yards and in almost all cases the only elaboration is the doorway. There are doorways with columns and pediment, or columns and lintel with cornice over, also doorways with flat pilasters, pediments and simpler doorways with pent eaves running entirely across the front of the building.

The majority of the houses in this district were built of Chestnut Hill stone, a somewhat straight grained stone of a grayish color well suited for long course work with wide white pointing. The fronts of many of these houses were of the same stone as the sides, but more carefully prepared, in some cases dressed into regular blocks, and the whole front was made to have a finer appearance than the rear or ends, the cornices being more highly ornamented and

embellished. The rain conductors have ornamented spout heads and all these houses have that quiet dignity only achieved by the Colonial Architecture, and well portray the culture, dignity and position of the owners or occupants.

Quite a number of these houses have a heavy molded or modillioned cornice along the eaves which returns on itself at each end. Up the gable face is carried a simple board barge flat against the stonework with bed mold under shingles, and others have the cornice carried up gabled faces in the regular classical manner. It is these free departures from the conventional so ably handled that lend interest to this style of Architecture.

"Grumblethorp," as the Wister house is styled, was built in 1744—next is the Morris house, built in 1772. Passing on up the road we go by Vernon Park on the left with its mansion somewhat resembling "Point Pleasant," the house of Benedict Arnold, on the banks of the Schuylkill, now in Fairmount Park.

Farther on we come to the Haines house "Wyck," built in 1690, and said to be the oldest existing house in Germantown; its ivy-covered gable is towards the street with heavy outside chimney, and the

grounds all around the house are well preserved.

Entering the grounds you approach a long roughcast stone house with French casement, but one step above



L. HAINES HOUSE

BUILT 1690



ENTRANCE DETAIL

CHEW HOUSE

the brick paving, the whole effect being long and low, depending entirely on proportion of masses and outline, rather than detail, which is almost entirely lacking. The effect is enhanced by an arbor over the whole side of house punctured only by windows and their shutters, giving a series of horizontal lines which are in turn broken by the wistaria which grows out in tufts and masses, presenting an artistic effect of light and shadow.

This is one of the best examples to be found in Germantown and one that shows after all, how little architectural detail sometimes counts in the ultimate result of satisfying the eye. The problem is a home; windows and doors, dormers and roof are necessary; the solution, their proper proportion in relation to each other both in size and position. You may be able to find fault with certain features being out of center, etc., but all is forgotten in the delightful contemplation of the inviting *home* which is every bit a home, overflowing with hospitality in its very looks. Its present owner, one of the original Haines family, may well be proud of it, as it should be of her, for one is surely a portrayal of the character of the other.

On the opposite side is the old-fashioned garden with its box hedges, and in all a delightful place.

After passing several minor houses we reach the Chew house "Cliveden" at Johnson Street. This is still in possession of the original Chew family, and sets in the center of large grounds on the right of German-

town Road. The main house has an imposing doric entrance, and in fact is quite elaborate in good detail. The house has one large gable with beautiful modillioned cornice with an L wing on the rear to the north, and slightly to the rear flanking it on each side are smaller gabled houses set at right angles with main house. The barn is slightly separated from the house, but is not of any special interest, except that it holds the old family coach in which Washington rode, also a "one-hoss Shay" made famous by Oliver Wendel Holmes, and from the spider-like appearance of the existing one, its huge high wheels and general cumbersome appearance, we can well imagine its total collapse in "one hundred years to a day."

It was around this house that much of the early Colonial and Revolutionary history of Philadelphia centered. Here it was the battle of Germantown was started which was so disastrous for the Colonial troops as two parties meeting in the early morning fog mistook each other for the enemy. Many lives were sacrificed before the mistake was discovered.

This house was quite a fortress, and in it were the British besieged by the Americans with their four-pounders which fortunately did but little damage to the house. Quite interesting accounts of both this and the Logan house are mentioned in Dr. S. Weir Mitchell's interesting book of Colonial days, entitled "Hugh Wynne."

Directly across the road is the Johnson or "Upsal" house, built in 1798. This is not so interesting. The cornice is worthy of mention for its lace-like detail, but the general proportions of the house are not as satisfactory as others in this neighborhood.



TYPICAL COLONIAL HOUSE

GERMANTOWN, PHILADELPHIA, PA.



COLONIAL HOUSE ON MAIN ROAD

HARTFORD'S NEW BRIDGE.

Hartford Bridge is one of the best illustrations that we have of the new American spirit that is building public works in monumental fashion, to live and last the centuries. It is a solid, sober structure of granite, with nine span arches, and 1200 feet in length. It carries an eighty-foot highway, which is the great artery of Connecticut, connecting the two busy portions of the State, divided by the river which gives it its name.

There has been a Hartford Bridge since 1808, and it has always been a busy bridge. It has had to be a strong one, for in the spring the usually mild Connecticut is a vicious stream, bringing down thousands of tons of broken ice and crashing it against Hartford Bridge. Captain Isaac Damon, of Northampton, Mass., who was a prominent bridge-builder of New England, built the original bridge, and he built it of hewn pine of a sort that is priceless to-day, pegged together in wonderful fashion. The river could never destroy his bridge. Fire did. But fire can never destroy the new

In connection with the building of the bridge, Hartford has taken the opportunity to clean up her rather slovenly river front, and, public enterprise co-operating with private, she has created a park and boulevard approach to her great enterprise. The water fronts of our American towns are disgraceful in almost every instance. Hartford, which blazed a path, a half-century ago, toward city parks, is blazing a new path to-day in the creation of a water front that shall typify and not disgrace the dignity and beauty of the city.—*Harper's Weekly*.



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PRESIDENT

L. E. JALLADE, SECRETARY
178 Fifth Avenue, N. Y.

LLOYD WARREN
3 East 33d Street, N. Y.
CHAIRMAN COMMITTEE OF EDUCATION

ANNOUNCEMENT

The Beaux Arts Society wishes to notify its students that it has taken rooms at No. 36 East 22d Street, where in the future all exercises will be held, and all drawings for judgment and exhibitions will be received.

The address of the Committee on Education will remain as before, No. 3 East 33d Street.

CLASS B. ORDER PROBLEM

Judgment Nov. 19, 1908

A PASSAGEWAY

Henderson, H.	.....	New York	.....	Atelier Prevot	.....	Placed M.
Schwartz, Philip	.....	"	"	"	"	M.
Gander, J. J.	.....	"	"	"	"	Placed M.
Thetford, Jas. V.	.....	"	"	"	"	M.
Ashmead, John	.....	"	"	"	"	M.



A FREQUENT TYPE OF GERMANTOWN HOUSE



A GERMANTOWN DOORWAY

Murtash, G. A.	New York	Atelier Prevot	M.
Clyde, Jas. W.	"	"	M.
Vollmer, Edwin	"	"	M.
DeHart, A. M.	"	"	M.
Vollmer, Carl A.	"	"	M.
Dyker, George	"	"	M.
Mink, Charles	"	Donn Barber	M.
Russell, Lewis H.	Washington, D.C.	Atelier Geo. Wash. Univ.	M.
No name	"	"	M.
Wallace, R. V.	St. Louis	Washington Univ.	M.
Graf, Hugo	"	"	M.
Hasness, Carlisle D.	Pittsburg	Atelier Carnegie Tech.	M.
Raguere, T. J.	"	"	M.
Muhr, P. J.	"	"	M.
Stockwell, J. J.	"	"	M.
Diethrick, A. M.	"	"	M.
Thoma, Walter	"	"	M.
Gehran, William	"	"	M.
Boyer, E. W.	"	"	M.
Clark, R. R.	"	"	M.
Burkhart, Jr., W. F.	"	"	Placed M.
Schaefer, W. F.	"	"	M.
Jacobs, Julian	"	"	M.
Mewhinney, P. S.	"	"	M.
Cope, J. W.	Philadelphia	T Square	M.
Griffith, E. F.	Pittsburg	Carnegie Tech.	Placed M.
Hazlewood, R. N.	"	"	M.
Hay, Paul R.	"	"	M.
Recvail, Robt. L.	"	"	M.
Jones, M.	"	"	M.
Smith, Thos. E.	"	"	M.
Stonerod, E. D.	"	"	M.
Behar, E. M.	New York	Boring & Tilton	M.
Frank, A. C.	"	"	M.
Leppin, W. F.	"	"	M.
Eiseman, A.	"	"	M.
McGill, H. J.	"	"	M.
Kruckemeyer, E. H.	Cincinnati	Fecheimer	M.
Foster, H. P.	Philadelphia	Drexel	M.
Thuman, F. J.	Baltimore	"	M.
Meyers, A. M.	"	Atelier	M.
Seufert, P. J.	"	"	M.
Gustafson, A. L.	Chicago	Bennett	M.
Wolf, R. G.	"	"	M.
Ingeman, L. S.	"	"	M.
Canfield, Walter	Youngstown, O.	Owsley	M.
Kritz, O. W.	New York	"	Placed M.
Palsen, R.	"	"	M.

ARCHAEOLOGY

Judgment of Nov. 19, 1908

A CLOCK TOWER

Bruton, F. G.	Pittsburg	Atelier Carnegie Tech.	M.
Lamont, A. G.	"	"	M.

Wentworth, S. S.	Pittsburg	Atelier Carnegie Tech.	M.
Smart, E. H.	"	"	M.
Israeli, E.	"	"	M.
Robling, O. J.	"	"	Placed M.
Jones, Jr., Walter	"	"	Placed M.
Stevens, P.	"	"	M.
Peebles, H. W.	"	"	M.
Ishen, O. H.	"	"	M.
Herman, T. B.	Philadelphia	T Square	M.
McGrail, A. H.	"	"	M.
Bartow, A.	"	"	M.
Dales, A. L.	"	"	Placed M.
Di Nardo, Antonio	"	"	Placed M.
Porreca, N. L.	"	"	M.
Hettel, J. N.	"	"	M.
Hauptle, F. W.	"	"	M.
Langville	Washington	Wash. Archi. Club	M.
Olsen, Ray L.	Wilkes-Barre	Puckey	M.
Soldwedel, F. A.	New York	Hornbostel	M.
Lautenbach, J. R.	"	"	Placed M.

CLASS B. PLAN PROBLEM

Judgment of Nov. 12, 1908

AN ELEVATED RAILROAD STATION

Result of Judgment

Heps, H. C.	New York	Atelier Hornbostel	M.
Pohle, G. H.	"	"	M.
Sheridan, J. J.	"	"	M.
Senger, J.	"	"	M.
Chrystie, E. P.	"	"	1st M.
Nicholais, R. A.	"	"	M.
Kilgour, J. A.	"	"	M.
Gzybowski, E.	"	Provot	M.
Sheres, Charles	"	"	M.
Barton, LeRoy	"	"	M.
Wright, R. M.	"	Donn Barber	M.
Boyer, J. D.	"	"	M.
Knox, E. A.	Pittsburg	Carnegie Tech.	M.
Alexander, A. S.	"	"	M.
Wentworth, S. C.	"	"	M.
Mitchell, G. E.	"	"	M.
Schoen, A. J.	"	"	M.
Peebles, H. W.	"	"	M.
Hutchins, W. P.	"	"	M.
Rich, H. E.	Philadelphia	T Square	M.
Hauptle, F. W.	"	"	M.
Morgan, F. DeF.	"	"	M.
McGrail, A. H.	"	"	M.
Culver, H. K.	New York	"	M.
Barrett, Leo	"	Carl L. Otto	M.
Finlayson, A. C.	"	"	M.
Kassurinen, J.	"	Ewing & Chappell	M.
Idell, G. S.	Philadelphia	Univ. of Penna.	M.
Henon, P. J.	"	"	M.
Smith, C. W.	"	"	M.
Kirby, C. S.	"	"	M.
Miller, J. E.	"	"	M.
Ellington, D.	"	"	M.
Pringle, T.	Youngstown, O.	Owslet	M.
Boucherle, P.	"	"	M.



A GERMANTOWN DOORWAY



SOME OLD HOUSES AND DOORWAYS



GERMANTOWN, PHILADELPHIA. PA.



FROM SNAP-SHOTS



MADE BY THE AUTHOR

THE AMERICAN ARCHITECT AND BUILDING NEWS

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THE annual convention of the American Institute of Architects, to be held this year in Washington, D. C., from December 15 to 17, inclusive, promises to be unparalleled in the history of the Institute in the importance of the subjects to be considered, and unusual interest is manifest as a consequence. The principal topic to be brought before the convention, as stated in the Institute Bulletin, is "The creation of a Department or Bureau of the Federal Government, with a board of consulting artists which would have control of buildings, landscape work, statuary, paintings and mural decorations so as to harmonize and systematize work of this character under the jurisdiction of the Government." This subject is of such vital and far-reaching interest and significance that it seems desirable to give it the most deliberate consideration. It is hoped that a full and representative attendance will promote the freest discussion and the wisest action possible in the light of the information that it is anticipated will be laid before the convention by those who have given the matter much thought and careful study.

IN view of the unstinted criticism which has lately been directed against New York's high buildings, in the course of which they have been held responsible for much of the city's architectural unloveliness, for street congestion, and for unsanitary conditions of office work, due to lack of light and air, it is little short of refreshing to learn that the Committee on Charter Revision of the Municipal Art Commission does not believe that lofty buildings are altogether incompatible with the

higher civilization. In a communication addressed to the Board of Aldermen on this subject, the committee states:

"As to light and air, one need only compare lower Manhattan as thirty years ago it could be seen from the Equitable Building roof—a flat mass of four, five and six-story buildings, approximately covering the ground and completely blanketing each other except at the street façade, with basement and first floor offices equally crowded by clerks largely working by gas light—with lately built dry and airy 'sky-scrapers,' the machinery of which has driven from their basements most of the humans that once sweltered there, and in which, taking all floors together, the proportion of occupants whose conditions are healthful and bright is far greater than before, and steadily rises as architects meet in scientific spirit the requirements imposed by the new conditions. * * * In short, our study of the problems arising in connection with the question of high buildings has shown us that they not merely supply an imperative need, but greatly mitigate the very evils with which they are charged, and are now adding to the pressure for other reforms equally desirable from every standpoint of civic pride and business economy, and that they should be encouraged and regulated rather than restricted."

Perhaps, after all, it would be well to pause before committing ourselves to restricting ordinance, and consider whether in our enthusiasm we have not been prone in some instances to accept as facts, mere assertions.

IN an article contributed to the *Craftsman*, Mr. Gutzon Borglum makes the prediction that the art school of to-day will eventually be replaced by the school of crafts. In this school the craftsmen would be trained in the many ways in which fine art individuality and taste may be made commercially valuable. Mr. Borglum believes that by this means the oft-times sorry career of the art student in which he eventually succumbs to his many trials and ekes out an existence amid uncongenial surroundings would be transformed into that of the happy and contented master craftsman, "putting life and beauty into our liberal arts." The need and value of such a school in New York is undeniable, and, as Mr. Borglum states, the Metropolitan Museum's rare collections might be utilized to supply examples and inspiration to numberless students, but to practical and thoughtful craftsmen acquainted with present-day conditions in this country there appear to be almost insuperable obstacles to the enrollment among their ranks of those possessing greatest talent. These obstacles exist in the form of organizations among the workers in shop, factory and studio, which, with their restrictions and deadening influence have driven men of genius to other callings, and deterred many a promising recruit from joining the ranks. Art and genius brook few restrictions. And if the calling of craftsmen as now circumscribed does not attract, naturally there would be few talented students in a school of crafts. But even if there were no difficulties in the way of a realization of Mr. Borglum's prophecy, it is hardly apparent why the school of crafts should entirely replace the present art school. Should it not rather co-operate with and supplement it?

THE AMERICAN ARCHITECT AND BUILDING NEWS

Vol. XCIV.

WEDNESDAY, DECEMBER 9, 1908.

No. 1720.



The New Building for the College of Physicians of Philadelphia

By CHARLES PERRY FISHER*

THE College of Physicians of Philadelphia was instituted in 1787 and incorporated in 1789; the oldest medical society in America which is not a State organization. The Charter reads "the objects of this College are to advance the science of medicine and thereby lessen human misery," etc., etc. Upon the roll of its membership will be found the names of the most distinguished men in medicine and surgery; and, in its infancy, the names of its Fellows are identified with the progress and growth of the new country.

The College held its meetings at stated periods in various places. The earliest mention of "providing a hall for the College" is 1849; but not until 1863 was the event realized, when the College took possession of its present quarters at the northeast corner of Thirteenth and Locust Streets.

This building has for some years proved inadequate for the growing needs of the College. As not only the

building but the site has proved too small, the new building is being erected on a much larger piece of ground on Twenty-second Street above Chestnut, at the southeast corner of Ludlow Street.

To understand properly the plans of the new structure, it must be understood that the College of Physicians is not in any sense a school of medicine, but, as stated above, a society for the advancement of medical science; its members, when duly qualified and elected, being entitled "Fellows." The building is intended to house their professional library, and to provide the members with adequate reading rooms when using the contents of the library. It also furnishes them with rooms for lectures, for the regular meetings of the society, and for formal receptions to visiting physicians and surgeons. There is also a large museum of anatomical and other specimens, and there are offices for the nurses' directory as well as for the librarian and his working force.

The style of architecture is English, of about the end of the 17th century. The material is dark red brick,

*The writer is greatly indebted to Mr. James P. Jamison, of Messrs. Cope & Stewardson, for his assistance in the technical description given in this article.

laid Flemish Bond, with basement, cornices, pilasters and other trimmings of Indiana limestone.

The lot is fortunately of sufficient size to permit of the building being placed at a considerable distance from the street line on all sides. At the street line is a low brick wall with high brick posts and iron railing between them. Between the iron railing and the building proper is a space for shrubbery and grass. The extreme size of the lot is, roughly, 130 feet front by 180 feet depth. The building itself has a frontage of 108 feet and a depth of 150 feet.

While fireproof construction is used throughout, the stack containing the books is cut off from the rest of the building by fire doors, and is provided with wire glass windows in metal frames, the windows being protected by rolling steel fire shutters.

The front vestibule, main hallway and staircase are floored and wainscoted with Vermont marble of different shades; light colors with slight veinings being selected. The reception hall of the first story is wainscoted to the ceiling with "silver ave," a light gray wood selected with a view to harmonizing with the marbles in the hall adjoining. On the right of the vestibule are the offices of the nurses' directory, and on the left the superintendent's office. The other arrangements of the first and second stories are fairly obvious from the names given on the plans. It will be noted that

the museum is furnished with an iron gallery around three sides, so as to give a large amount of wall space for cases.

The book stack consists of seven tiers and has a capacity of about 300,000 volumes.

The large monumental hall occupying the front portion of the second story, is not only a meeting place for the College, but is a portrait gallery with auxiliary top light. On its walls will hang oil paintings of famous members of the medical profession, who have been its Presidents. It has oak wainscoting, pilasters, etc., and deeply coffered plaster ceiling. When the room is used for important meetings, an audience of five hundred will be comfortably seated.

One feature of this building which has been carried to an extent not hitherto attempted, is the seminar room. A large number of these rooms are provided, both on the second and mezzanine floors, where members may surround themselves by volumes for special research, and be free from all interruption.

The entire equipment of heating, lighting, ventilating, vacuum cleaning, pneumatic tubes, electric lifts, and intercommunicating telephone systems, is of the latest and most approved designs. The completed structure will fulfill infinitely well all the demands made upon the architects, and will stand as another monument to their ability and genius.



INAUGURAL MEETING, HELD IN THE
CHAMBER OF DEPUTIES, HOUSES OF PARLIAMENT

VIII INTERNATIONAL CONGRESS OF ARCHITECTS
VIENNA, AUSTRIA



THE ART GALLERY, VIENNA

WHERE ARCHITECTURAL EXHIBITION OF THE VIII INTERNATIONAL CONGRESS WAS HELD

RÉSUMÉ OF THE PROCEEDINGS OF THE VIII INTERNATIONAL CONGRESS OF ARCHITECTS, HELD AT VIENNA, MAY, 1908

By GEORGE OAKLEY TOTTEN, JR., Delegate from the U. S. Government and Honorary Secretary of the Congress

The Eighth International Congress of Architects, held in Vienna, May 18 to 24, like its predecessors, marks a great event in the history of the profession.

These Congresses while thoroughly international in their personnel, with representatives from practically all civilized countries, still have the paramount flavor of the country in which they are held. It is exceedingly interesting to observe this difference in nationalities.*

Each Congress has shown a marked and real advance. Never before has such a wide range of papers been presented for consideration and discussion. The series of "Compte Rendu" of these Congresses presents a most valuable collection of material on big, broad subjects of vital interest to architects.

The Congress was a marked success from every point of view. Held in one of the most wonderful cities of the world, during the most beautiful time of the year, from the intellectual and the social and the merely pleasurable point of view, it was unsurpassed.

The inaugural meeting was held in the beautiful Hemicycle of the Chamber of Deputies, in the Parliament Building, one of Hansen's masterpieces. The ceremony was interesting and imposing. On the main floor were a thousand men, members of the Diplomatic Corps, including the American Ambassador, noted men in the arts and sciences, and many of the world's most famous architects. The galleries were filled with the wives, sisters, and daughters of the members.

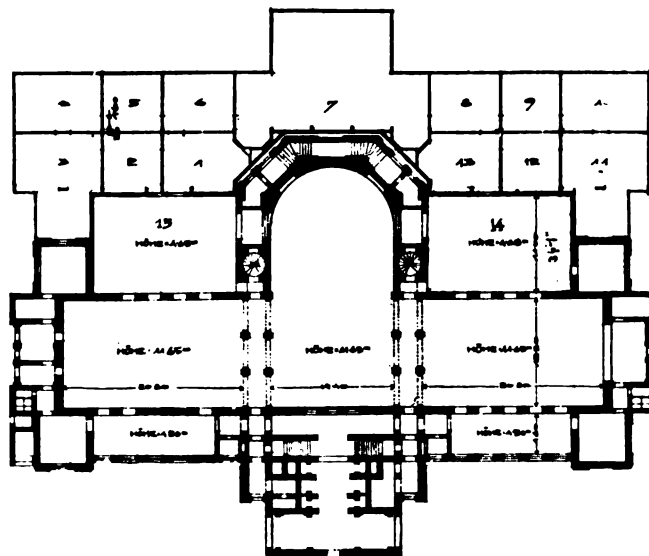
The Home Secretary, Freiherr von Bierneth, presided in place of the Prime Minister, Baron Wlad von

Beck. With him were the President of the Chamber, and the Mayor of the city. The Minister gave a cordial address of welcome and a delegate from each country replied. Among those replying were: Messrs. Daumet (France), Nagy (Hungary), Cannizzaro (Italy), Cuypers (Holland), Totten (America), Keuttnew (Russia), Mariscal (Mexico), Velasques (Spain), Berindey (Roumania).

Herr Otto Wagner, President of the Congress, then read the opening speech, from which the following extracts are taken:

"It is my pleasant duty to greet our honored foreign colleagues in the name of my Austrian confrères. I welcome you all most cordially and hope that you may find fresh inspiration in these surroundings, and hearty enjoyment.

"For the eighth time the architects of all civilized countries have met together at a Congress. The aim



PLAN OF GARTENBAU-GESELLSCHAFT

SPACE NUMBERED 14 WAS AMERICAN SECTION

*Mr. Totten has attended the last five Congresses: Vienna, 1908; London, 1906; Spain, 1904; Paris, 1900; Belgium, 1897.—Ed.



EXHIBITION IN AMERICAN SECTION

VIII INTERNATIONAL CONGRESS OF ARCHITECTS, VIENNA, AUSTRIA

and object of this Congress is the furthering of art. As you all know, art is the standard by which civilization is measured, and is one of the important economic factors of the welfare of nations. Art takes root in the spirit of the times. The present generation is so preoccupied with science, politics and finance that artistic feeling must be neglected, and hence the promotion of art is bound to suffer. It is therefore not to be wondered at that artists, the representatives of art, recognize the danger and seek to avert it.

"Since architecture has always been the leader among the arts, the first duty in this matter devolves upon the architects. Earlier Congresses have indicated how we may further art, and have given the answer to two important artistic questions. The sixth International Congress agreed by a large majority of votes that liberty is essential to the development of art, and the seventh Congress passed a resolution that the designs of public buildings should, in the interest of art, be left to the decision of artists, but that the state authorities should have control in so far as purpose, economics and construction are concerned. The encouragement of art has, however, not only to create measures; it must also sweep aside all that may stand in the way of the progress of art. All that is new in art, and more especially the best, partakes of the nature of a triumph and force or violence is always associated with the idea of conquest. The artist creates that which in his opinion is the best, and produces that which, as Goethe expressed it, the world should admire, not only that which it possibly might admire."

"The president of the British committee, Mr. Belcher, in his opening address at the seventh International Congress of Architects, laid stress on the point that one of the most important aims for which we must strive is the artistic education of the nation. That, however, can only be compassed if the state authorities see to it that good and only good work be produced, for the good alone can be victorious. We appeal, therefore, to those in power to set the combatants in array, to appoint leaders, and to discuss questions on art with artists. The artists will be all the more ready to agree to this, that each step advanced in art has a corresponding step in the advance of their status. The world may be certain of one thing: that all artists whatever opinions they hold will ever strive with equal fervor towards the one sublime aim—perfection in art. I close with a fervent appeal to all Governments to recognize the decisions of the Congress, as well as to support all efforts for the advancement of art, and thus, through art, to promote the welfare of nations."

The opening meeting concluded with this speech, which was received with much applause.

The afternoon was given to the magnificent Imperial Royal Library, built in 1722 by Fischer von Erlach, where there had been arranged in honor of the Congress an exhibition of priceless architectural designs by old masters, bearing signatures of Sangallo, Bramante, Bernini, Zuccherro, Fischer von Erlach, etc. It is always absorbingly interesting to see the studies and drawings of architects of another age—to see how they worked, what they worked on, and with what material.

The modern school designer is lost without his tracing paper. How did these old masters get on without it? Would their work have been better with it?

In the evening an elaborate banquet for 1,500 guests was given to the Congress in the great Guild Hall of the Rathaus, by the Mayor and the city of Vienna. As souvenirs, bouquets of red and white flowers, with ribbons of red and white, the colors of the city, were given to the ladies, and to the gentlemen filled cigar cases ornamented with the banner bearer which crowns the Rathaus Tower. The toast of the evening was the Emperor Francis Joseph, the patron of the Congress. The arrangements were admirable, the dinner perfect, the wine of the best, and the cordiality of the hosts made the evening one long to be remembered by the guests from distant lands.

Tuesday morning, in the hall of the Society of Engineers and Architects, subject No. 1 was taken up, "The Regulation of the Cultivation of Art by the State." The opening paper was given by Baurath Alois Wurm (Vienna), who read the resolution proposed by the committee in charge of the preparatory work of the Congress.

"That every Government be urgently requested to establish a Ministry of Fine Arts, or at least a section which shall deal with subjects relating to the fine arts. To such a ministry or section shall be attached artists of established reputation. Since architecture can be considered the leading art, architects shall be in the majority. The work of this ministry or section shall be the advancement and encouragement of the fine arts in all their branches."

Baurath Wurm continued:

"The essentially important in any civilization never arises from the deliberate invention of a single individual, but is always the work of a community. Just as

the laws of ethics or of social rights are determined by all, for all, so also do the rules of architecture spring from the endeavors and the conventions of the general public. Thus architecture is not only the most objective, but also the most firmly established of the fine arts. Therefore it is that buildings provide the most accurate standard for judging of the former civilization. Hence the state, which itself is a product of the civilized needs of humanity, is under the obligation of according a suitable portion to this essential factor of civilization, instead of neglecting it or treating it as a matter of secondary importance. This present want of consideration stands in bitter contrast to the brilliant periods of history, more especially the classic.

"Matters have reached such a pass that in most circles architecture, the leader and organizer of the fine arts, is hardly reckoned among the fine arts, but is only considered a trade.

"Even from this fact alone is manifest the necessity of our demand, that, under the auspices of Government, architecture should be reunited with her sister arts; that a special Ministry for Fine Arts shall be created, or at least an independent and specially organized section for fine arts shall form part of another ministry, and shall be under the direction of an architect.

"The cultivation of art must keep in touch with the spirit of the times, and must certainly not come under the yoke and red tape of fiscal and administrative officialdom. It must not be considered from the point of view that art is a luxury, a luxury which is secondary to the necessities of the state. Unfortunately this is the very position taken by many well-educated people, who show a lamentable lack of culture in not recognizing that this apparent luxury is in reality the necessity of a higher civilization.

"The creation of a central office would facilitate the



EXHIBITION IN AMERICAN SECTION

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EXHIBITION IN AMERICAN SECTION

VIII INTERNATIONAL CONGRESS OF ARCHITECTS, VIENNA, AUSTRIA

desirable employment of non-official architects, and the recognition of talent not hitherto available for state purposes would awaken important artistic impulses. Thus greater variety would be obtained in the architecture of public buildings, and the character of individual towns might attain a high artistic standard.

"No suitable solution to these pressing questions can be found so long as architecture is kept apart from its natural union with the other fine arts, and no central office is arranged for them. Architecture should not be coupled with public works, such as water, roads, and bridges.

"Architecture can only attain an ideal position through the offices of a Ministry of Fine Arts. But if for the present this ideal is not obtainable, architecture should have a section of its own, under the direction of an eminent architect, and this section should be attached to some other suitable ministry, which might be called the Ministry for Fine Arts and Public Buildings. The Austrian Chamber of Deputies (Abgeordnetenhaus) has just accepted the proposal of Oberbaurath Günther, that within the Office of Works there shall be created an independent section for art.

"The Zentralvereinigung of Architects maintains its conviction that a centre must be created for architecture and the sister arts dependent on her. They word their request as follows:

"The Abgeordnetenhaus is urgently requested to arrange, as soon as possible, a special Ministry for Fine Arts, and as a preliminary measure to establish in an existing office, an independent and technical section for fine arts."

"Many other associations and individuals in Austria and elsewhere have signified their cordial agreement with the above resolution."

The speaker read communications from Hungary, France, Holland and Bulgaria, enthusiastically endorsing the resolution, and read the list of votes in its favor already given by Austria, Hungary, Bosnia, Germany, Holland, Denmark, Sweden, England, France, Belgium, Switzerland, Spain, Italy, Russia, Roumania, Servia, Bulgaria, and Turkey—in all 384 with but one vote against it.

Baurath Wurm closed with an urgent appeal that the resolution should be unanimously accepted without change.

Papers on the subject were read by Prof. Virgil Nagy (Budapest), M. Berinday (Bucharest), Count G. N. Plunkett, director of the Museum of Science and Art, Dublin.

Concurrently with the meeting held in the hall of the Society of Engineers and Architects, a meeting was held in the hall of the Gewerbe-Verein, where a paper was read by Prof. Mayreder (Vienna) on a "Comparison of the Berlin, London, Paris, Rome and Vienna Building Regulations as Regards Their Influence on the Architectural Finish of the Dwelling Houses and the Appearance of the City."

Comparing the regulations the professor said that Berlin possessed the newest building act, *i. e.*, 1907, while Rome and Vienna had the most old fashioned, though new schemes are being prepared by both of these towns. He grouped his comparisons under six heads: (1) The planning of the town, where London appears to be most behindhand. (2) External elevations. Here Paris leads, having gone thoroughly into the question of projections, etc., and provided for all contingencies, with a view to hampering the architect as little as possible. (3) Internal arrangement. Rome alone forbids cellars to be used as dwellings and ex-

cludes wood as a building material where possible. (4) Beauty of design. There is no mention of this in any of the acts, but Vienna is providing for it. (5) Preservation of monuments. Austria has no laws on this subject. (6) The architect's responsibility. In Rome and Vienna the architect signs the designs as well as the client and contractor, but in Vienna the contractor is the responsible party.

Professor von Feldegg (Vienna) read an exceedingly interesting paper on "The Elements of Modern Architecture." He compared architecture to nature, which possesses not only an external and objective side, but, what is more important, an inward and subjective element. Architecture expresses natural wants satisfied, but is not copied from nature any more than speech, a natural expression of wants, is imitative of nature. The peculiarity of the modern architectural movement lies in the fact that it harks back from the objective to the subjective; that it declines to bow to accepted principles, and shows a Nihilistic enmity for tradition.

Professor Dolezal (Vienna) read an instructive paper on "The Photometric Survey of Architectural Monuments." As far back as 1839 French scientists affirmed that photography could be used for measuring and reconstructing purposes. Laussedat built the first phototheodolite which, through various stages, has culminated in the perfect modern instrument invented by Dr. Schell, of Vienna. Although the Austrians lead in this science, it is most widely put to practical use in Germany, where a society was formed in 1885, called the Photometric Society of Berlin. Since that year over a thousand

buildings have been measured with a facility and rapidity impossible with the more usual methods. Professor Dolezal tested his photometric measurements by others carefully taken on the spot and found them to agree to within three centimeters; hence they are exact to all intents and purposes.

Baurath Ivocovic (Zara) gave a short account of the principal mediæval buildings in which Dalmatia is so rich.

Baurath Fassbender (Vienna) opened up many questions in his paper on the building of towns and on legislative measures. He said that it was the duty of all nations to provide for the extensions of their towns on suitable and hygienic plans, and hence chairs should be founded in technical schools where this important science could be studied. The question is practically a new one, as towns have only recently begun to spread rapidly, but, nevertheless, the need of knowledge on the subject is imperative.

Dr. Stübgen, of Berlin, said Austria was the only country that compelled municipalities to provide plans for extension. In France, Germany and Belgium municipalities were free so to do. In England the extension of the town appeared to be no man's business. He considered it of great importance that certain sites should be reserved for public buildings.

Tuesday afternoon the Exhibition of International Architecture was formally opened by the Minister of Public Instruction, Dr. Gustave Marchet, in the *Gartenbau-Gesellschaft*.

The Permanent Committee of each country, repre-



EXHIBITION IN AMERICAN SECTION

VIII INTERNATIONAL CONGRESS OF ARCHITECTS, VIENNA, AUSTRIA



A GERMANTOWN DOORWAY

Murtash, G. A.	New York	Atelier Prevot	M.
Clyde, Jas. W.	"	"	M.
Vollmer, Edwin	"	"	M.
DeHart, A. M.	"	"	M.
Vollmer, Carl A.	"	"	M.
Dyker, George	"	"	M.
Mink, Charles	"	Donn Barber	M.
Russell, Lewis H.	Washington, D.C.	Atelier Geo. Wash. Univ.	M.
No name	"	"	M.
Wallace, R. V.	St. Louis	Washington Univ.	M.
Graf, Hugo	"	"	M.
Hasness, Carlisle D.	Pittsburg	Atelier Carnegie Tech.	M.
Raguere, T. J.	"	"	M.
Muhr, P. J.	"	"	M.
Stockwell, J. J.	"	"	M.
Diethrick, A. M.	"	"	M.
Thoma, Walter	"	"	M.
Gehran, William	"	"	M.
Boyer, E. W.	"	"	M.
Clark, R. R.	"	"	M.
Burkhart, Jr., W. F.	"	"	Placed M.
Schaefer, W. F.	"	"	M.
Jacobs, Julian	"	"	M.
Mewhinney, P. S.	"	"	M.
Cope, J. W.	Philadelphia	T Square	M.
Griffith, E. F.	Pittsburg	Carnegie Tech.	Placed M.
Hazlewood, R. N.	"	"	M.
Hay, Paul R.	"	"	M.
Reevail, Robt. L.	"	"	M.
Jones, M.	"	"	M.
Smith, Thos. E.	"	"	M.
Stonerod, E. D.	"	"	M.
Behar, E. M.	New York	Boring & Tilton	M.
Frank, A. C.	"	"	M.
Leppin, W. F.	"	"	M.
Eiseman, A.	"	"	M.
McGill, H. J.	"	"	M.
Kruckemeyer, E. H.	Cincinnati	Fecheimer	M.
Foster, H. P.	Philadelphia	Drexel	M.
Thuman, F. J.	Baltimore	"	M.
Meyers, A. M.	"	Atelier	M.
Seufert, P. J.	"	"	M.
Gustafson, A. L.	Chicago	Bennett	M.
Wolf, R. G.	"	"	M.
Ingeman, L. S.	"	"	M.
Canfield, Walter	Youngstown, O.	Owsley	M.
Kritz, O. W.	New York	"	Placed M.
Pallisen, R.	"	"	M.

ARCHAEOLOGY

Judgment of Nov. 19, 1908

A CLOCK TOWER

Bruton, F. G.	Pittsburg	Atelier Carnegie Tech.	M.
Lamont, A. G.	"	"	M.

Wentworth, S. S.	Pittsburg	Atelier Carnegie Tech.	M.
Smart, E. H.	"	"	M.
Israeli, E.	"	"	M.
Robling, O. J.	"	"	Placed M.
Jones, Jr., Walter	"	"	Placed M.
Stevens, P.	"	"	M.
Peebles, H. W.	"	"	M.
Ishen, O. H.	"	"	M.
Herman, T. B.	Philadelphia	T Square	M.
McGrail, A. H.	"	"	M.
Bartow, A.	"	"	M.
Dales, A. L.	"	"	Placed M.
Di Nardo, Antonio	"	"	Placed M.
Porreca, N. L.	"	"	M.
Hettel, J. N.	"	"	M.
Hauptle, F. W.	"	"	M.
Langville,	Washington	Wash. Archi. Club	M.
Olsen, Ray L.	Wilkes-Barre	Puckey	M.
Soldwedel, F. A.	New York	Hornbostel	M.
Lautenbach, J. R.	"	"	Placed M.

CLASS B. PLAN PROBLEM

Judgment of Nov. 12, 1908

AN ELEVATED RAILROAD STATION

Result of Judgment

Heps, H. C.	New York	Atelier Hornbostel	M.
Pohle, G. H.	"	"	M.
Sheridan, J. J.	"	"	M.
Senger, J.	"	"	M.
Chrystie, E. P.	"	"	1st M.
Nicholais, R. A.	"	"	M.
Kilgour, J. A.	"	"	M.
Gzybowski, E.	"	Provot	M.
Sheres, Charles	"	"	M.
Barton, LeRoy	"	"	M.
Wright, R. M.	"	Donn Barber	M.
Boyer, J. D.	"	"	M.
Knox, E. A.	Pittsburg	Carnegie Tech.	M.
Alexander, A. S.	"	"	M.
Wentworth, S. C.	"	"	M.
Mitchell, G. E.	"	"	M.
Schoen, A. J.	"	"	M.
Peebles, H. W.	"	"	M.
Hutchins, W. P.	"	"	M.
Rich, H. E.	Philadelphia	T Square	M.
Hauptle, F. W.	"	"	M.
Morgan, F. DeF.	"	"	M.
McGrail, A. H.	"	"	M.
Culver, H. K.	New York	"	M.
Barrett, Leo	"	Carl L. Otto	M.
Finlayson, A. C.	"	"	M.
Kassurinen, J.	"	Ewing & Chappell	M.
Idell, G. S.	Philadelphia	Univ. of Penna.	M.
Henon, P. J.	"	"	M.
Smith, C. W.	"	"	M.
Kirby, C. S.	"	"	M.
Miller, J. E.	"	"	M.
Ellington, D.	"	"	M.
Pringle, T.	Youngstown, O.	Owslet	M.
Boucherle, P.	"	"	M.



A GERMANTOWN DOORWAY



SOME OLD HOUSES AND DOORWAYS



GERMANTOWN, PHILADELPHIA, PA.



FROM SNAP-SHOTS



MADE BY THE AUTHOR

THE AMERICAN ARCHITECT AND BUILDING NEWS

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December 2, 1908.

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THE annual convention of the American Institute of Architects, to be held this year in Washington, D. C., from December 15 to 17, inclusive, promises to be unparalleled in the history of the Institute in the importance of the subjects to be considered, and unusual interest is manifest as a consequence. The principal topic to be brought before the convention, as stated in the Institute Bulletin, is "The creation of a Department or Bureau of the Federal Government, with a board of consulting artists which would have control of buildings, landscape work, statuary, paintings and mural decorations so as to harmonize and systematize work of this character under the jurisdiction of the Government." This subject is of such vital and far-reaching interest and significance that it seems desirable to give it the most deliberate consideration. It is hoped that a full and representative attendance will promote the freest discussion and the wisest action possible in the light of the information that it is anticipated will be laid before the convention by those who have given the matter much thought and careful study.

IN view of the unstinted criticism which has lately been directed against New York's high buildings, in the course of which they have been held responsible for much of the city's architectural unloveliness, for street congestion, and for unsanitary conditions of office work, due to lack of light and air, it is little short of refreshing to learn that the Committee on Charter Revision of the Municipal Art Commission does not believe that lofty buildings are altogether incompatible with the

higher civilization. In a communication addressed to the Board of Aldermen anent this subject, the committee states:

"As to light and air, one need only compare lower Manhattan as thirty years ago it could be seen from the Equitable Building roof—a flat mass of four, five and six-story buildings, approximately covering the ground and completely blanketing each other except at the street façade, with basement and first floor offices equally crowded by clerks largely working by gas light—with lately built dry and airy 'sky-scrapers,' the machinery of which has driven from their basements most of the humans that once sweltered there, and in which, taking all floors together, the proportion of occupants whose conditions are healthful and bright is far greater than before, and steadily rises as architects meet in scientific spirit the requirements imposed by the new conditions. * * * In short, our study of the problems arising in connection with the question of high buildings has shown us that they not merely supply an imperative need, but greatly mitigate the very evils with which they are charged, and are now adding to the pressure for other reforms equally desirable from every standpoint of civic pride and business economy, and that they should be encouraged and regulated rather than restricted."

Perhaps, after all, it would be well to pause before committing ourselves to restricting ordinance, and consider whether in our enthusiasm we have not been prone in some instances to accept as facts, mere assertions.

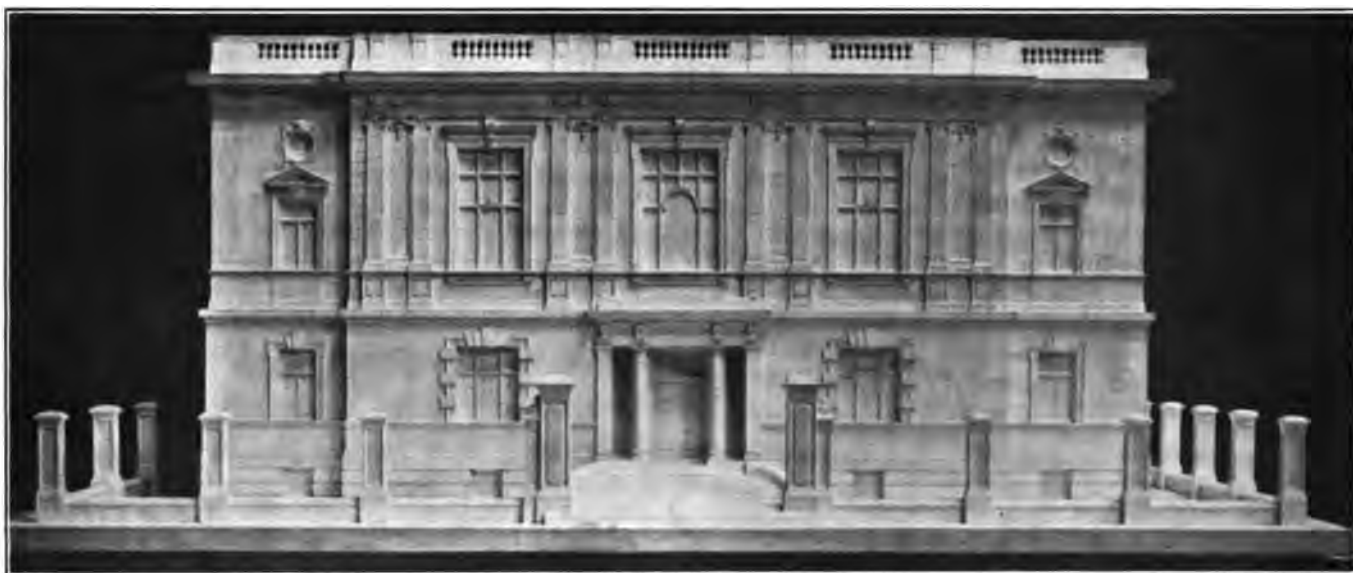
IN an article contributed to the *Craftsman*, Mr. Gutzon Borglum makes the prediction that the art school of to-day will eventually be replaced by the school of crafts. In this school the craftsmen would be trained in the many ways in which fine art individuality and taste may be made commercially valuable. Mr. Borglum believes that by this means the oft-times sorry career of the art student in which he eventually succumbs to his many trials and ekes out an existence amid uncongenial surroundings would be transformed into that of the happy and contented master craftsman, "putting life and beauty into our liberal arts." The need and value of such a school in New York is undeniable, and, as Mr. Borglum states, the Metropolitan Museum's rare collections might be utilized to supply examples and inspiration to numberless students, but to practical and thoughtful craftsmen acquainted with present-day conditions in this country there appear to be almost insuperable obstacles to the enrollment among their ranks of those possessing greatest talent. These obstacles exist in the form of organizations among the workers in shop, factory and studio, which, with their restrictions and deadening influence have driven men of genius to other callings, and deterred many a promising recruit from joining the ranks. Art and genius brook few restrictions. And if the calling of craftsmen as now circumscribed does not attract, naturally there would be few talented students in a school of crafts. But even if there were no difficulties in the way of a realization of Mr. Borglum's prophecy, it is hardly apparent why the school of crafts should entirely replace the present art school. Should it not rather co-operate with and supplement it?

THE AMERICAN ARCHITECT AND BUILDING NEWS

Vol. XCIV.

WEDNESDAY, DECEMBER 9, 1908.

No. 1720.



The New Building for the College of Physicians of Philadelphia

By CHARLES PERRY FISHER*

THE College of Physicians of Philadelphia was instituted in 1787 and incorporated in 1789; the oldest medical society in America which is not a State organization. The Charter reads "the objects of this College are to advance the science of medicine and thereby lessen human misery," etc., etc. Upon the roll of its membership will be found the names of the most distinguished men in medicine and surgery; and, in its infancy, the names of its Fellows are identified with the progress and growth of the new country.

The College held its meetings at stated periods in various places. The earliest mention of "providing a hall for the College" is 1849; but not until 1863 was the event realized, when the College took possession of its present quarters at the northeast corner of Thirteenth and Locust Streets.

This building has for some years proved inadequate for the growing needs of the College. As not only the

building but the site has proved too small, the new building is being erected on a much larger piece of ground on Twenty-second Street above Chestnut, at the southeast corner of Ludlow Street.

To understand properly the plans of the new structure, it must be understood that the College of Physicians is not in any sense a school of medicine, but, as stated above, a society for the advancement of medical science; its members, when duly qualified and elected, being entitled "Fellows." The building is intended to house their professional library, and to provide the members with adequate reading rooms when using the contents of the library. It also furnishes them with rooms for lectures, for the regular meetings of the society, and for formal receptions to visiting physicians and surgeons. There is also a large museum of anatomical and other specimens, and there are offices for the nurses' directory as well as for the librarian and his working force.

The style of architecture is English, of about the end of the 17th century. The material is dark red brick,

*The writer is greatly indebted to Mr. James P. Jamison, of Messrs. Cope & Stewardson, for his assistance in the technical description given in this article.

laid Flemish Bond, with basement, cornices, pilasters and other trimmings of Indiana limestone.

The lot is fortunately of sufficient size to permit of the building being placed at a considerable distance from the street line on all sides. At the street line is a low brick wall with high brick posts and iron railing between them. Between the iron railing and the building proper is a space for shrubbery and grass. The extreme size of the lot is, roughly, 130 feet front by 180 feet depth. The building itself has a frontage of 108 feet and a depth of 150 feet.

While fireproof construction is used throughout, the stack containing the books is cut off from the rest of the building by fire doors, and is provided with wire glass windows in metal frames, the windows being protected by rolling steel fire shutters.

The front vestibule, main hallway and staircase are floored and wainscoted with Vermont marble of different shades; light colors with slight veinings being selected. The reception hall of the first story is wainscoted to the ceiling with "silver aya," a light gray wood selected with a view to harmonizing with the marbles in the hall adjoining. On the right of the vestibule are the offices of the nurses' directory, and on the left the superintendent's office. The other arrangements of the first and second stories are fairly obvious from the names given on the plans. It will be noted that

the museum is furnished with an iron gallery around three sides, so as to give a large amount of wall space for cases.

The book stack consists of seven tiers and has a capacity of about 300,000 volumes.

The large monumental hall occupying the front portion of the second story, is not only a meeting place for the College, but is a portrait gallery with auxiliary top light. On its walls will hang oil paintings of famous members of the medical profession, who have been its Presidents. It has oak wainscoting, pilasters, etc., and deeply coffered plaster ceiling. When the room is used for important meetings, an audience of five hundred will be comfortably seated.

One feature of this building which has been carried to an extent not hitherto attempted, is the seminar room. A large number of these rooms are provided, both on the second and mezzanine floors, where members may surround themselves by volumes for special research, and be free from all interruption.

The entire equipment of heating, lighting, ventilating, vacuum cleaning, pneumatic tubes, electric lifts, and intercommunicating telephone systems, is of the latest and most approved designs. The completed structure will fulfill infinitely well all the demands made upon the architects, and will stand as another monument to their ability and genius.



INAUGURAL MEETING, HELD IN THE
CHAMBER OF DEPUTIES, HOUSES OF PARLIAMENT

VIII INTERNATIONAL CONGRESS OF ARCHITECTS
VIENNA, AUSTRIA



THE ART GALLERY, VIENNA

WHERE ARCHITECTURAL EXHIBITION OF THE VIII INTERNATIONAL CONGRESS WAS HELD

RÉSUMÉ OF THE PROCEEDINGS OF THE VIII INTERNATIONAL CONGRESS OF ARCHITECTS, HELD AT VIENNA, MAY, 1908

By GEORGE OAKLEY TOTTEN, JR., Delegate from the U. S. Government and Honorary Secretary of the Congress

The Eighth International Congress of Architects, held in Vienna, May 18 to 24, like its predecessors, marks a great event in the history of the profession.

These Congresses while thoroughly international in their personnel, with representatives from practically all civilized countries, still have the paramount flavor of the country in which they are held. It is exceedingly interesting to observe this difference in nationalities.*

Each Congress has shown a marked and real advance. Never before has such a wide range of papers been presented for consideration and discussion. The series of "Compte Rendu" of these Congresses presents a most valuable collection of material on big, broad subjects of vital interest to architects.

The Congress was a marked success from every point of view. Held in one of the most wonderful cities of the world, during the most beautiful time of the year, from the intellectual and the social and the merely pleasurable point of view, it was unsurpassed.

The inaugural meeting was held in the beautiful Hemicycle of the Chamber of Deputies, in the Parliament Building, one of Hansen's masterpieces. The ceremony was interesting and imposing. On the main floor were a thousand men, members of the Diplomatic Corps, including the American Ambassador, noted men in the arts and sciences, and many of the world's most famous architects. The galleries were filled with the wives, sisters, and daughters of the members.

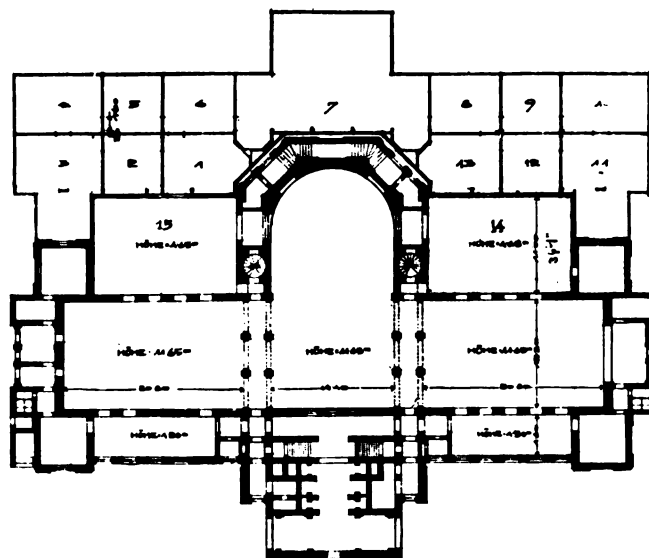
The Home Secretary, Freiherr von Biernerth, presided in place of the Prime Minister, Baron Wlad von

Beck. With him were the President of the Chamber, and the Mayor of the city. The Minister gave a cordial address of welcome and a delegate from each country replied. Among those replying were: Messrs. Daumet (France), Nagy (Hungary), Cannizzaro (Italy), Cuypers (Holland), Totten (America), Keuttnew (Russia), Mariscal (Mexico), Velasques (Spain), Berindey (Roumania).

Herr Otto Wagner, President of the Congress, then read the opening speech, from which the following extracts are taken:

"It is my pleasant duty to greet our honored foreign colleagues in the name of my Austrian confrères. I welcome you all most cordially and hope that you may find fresh inspiration in these surroundings, and hearty enjoyment.

"For the eighth time the architects of all civilized countries have met together at a Congress. The aim



PLAN OF GARTENBAU-GESELLSCHAFT

SPACE NUMBERED 14 WAS AMERICAN SECTION

*Mr. Totten has attended the last five Congresses: Vienna, 1908; London, 1906; Spain, 1904; Paris, 1900; Belgium, 1897.—Ed.



ENTRANCE DETAIL

CHEW HOUSE

the brick paving, the whole effect being long and low, depending entirely on proportion of masses and outline, rather than detail, which is almost entirely lacking. The effect is enhanced by an arbor over the whole side of house punctured only by windows and their shutters, giving a series of horizontal lines which are in turn broken by the wistaria which grows out in tufts and masses, presenting an artistic effect of light and shadow.

This is one of the best examples to be found in Germantown and one that shows after all, how little architectural detail sometimes counts in the ultimate result of satisfying the eye. The problem is a home; windows and doors, dormers and roof are necessary; the solution, their proper proportion in relation to each other both in size and position. You may be able to find fault with certain features being out of center, etc., but all is forgotten in the delightful contemplation of the inviting *home* which is every bit a home, overflowing with hospitality in its very looks. Its present owner, one of the original Haines family, may well be proud of it, as it should be of her, for one is surely a portrayal of the character of the other.

On the opposite side is the old-fashioned garden with its box hedges, and in all a delightful place.

After passing several minor houses we reach the Chew house "Cliveden" at Johnson Street. This is still in possession of the original Chew family, and sets in the center of large grounds on the right of German-

town Road. The main house has an imposing doric entrance, and in fact is quite elaborate in good detail. The house has one large gable with beautiful modillioned cornice with an L wing on the rear to the north, and slightly to the rear flanking it on each side are smaller gabled houses set at right angles with main house. The barn is slightly separated from the house, but is not of any special interest, except that it holds the old family coach in which Washington rode, also a "one-hoss Shay" made famous by Oliver Wendell Holmes, and from the spider-like appearance of the existing one, its huge high wheels and general cumbersome appearance, we can well imagine its total collapse in "one hundred years to a day."

It was around this house that much of the early Colonial and Revolutionary history of Philadelphia centered. Here it was the battle of Germantown was started which was so disastrous for the Colonial troops as two parties meeting in the early morning fog mistook each other for the enemy. Many lives were sacrificed before the mistake was discovered.

This house was quite a fortress, and in it were the British besieged by the Americans with their four-pounders which fortunately did but little damage to the house. Quite interesting accounts of both this and the Logan house are mentioned in Dr. S. Weir Mitchell's interesting book of Colonial days, entitled "Hugh Wynne."

Directly across the road is the Johnson or "Upsal" house, built in 1798. This is not so interesting. The cornice is worthy of mention for its lace-like detail, but the general proportions of the house are not as satisfactory as others in this neighborhood.



TYPICAL COLONIAL HOUSE

GERMANTOWN, PHILADELPHIA, PA.



COLONIAL HOUSE ON MAIN ROAD

HARTFORD'S NEW BRIDGE.

Hartford Bridge is one of the best illustrations that we have of the new American spirit that is building public works in monumental fashion, to live and last the centuries. It is a solid, sober structure of granite, with nine span arches, and 1200 feet in length. It carries an eighty-foot highway, which is the great artery of Connecticut, connecting the two busy portions of the State, divided by the river which gives it its name.

There has been a Hartford Bridge since 1808, and it has always been a busy bridge. It has had to be a strong one, for in the spring the usually mild Connecticut is a vicious stream, bringing down thousands of tons of broken ice and crashing it against Hartford Bridge. Captain Isaac Damon, of Northampton, Mass., who was a prominent bridge-builder of New England, built the original bridge, and he built it of hewn pine of a sort that is priceless to-day, pegged together in wonderful fashion. The river could never destroy his bridge. Fire did. But fire can never destroy the new

In connection with the building of the bridge, Hartford has taken the opportunity to clean up her rather slovenly river front, and, public enterprise co-operating with private, she has created a park and boulevard approach to her great enterprise. The water fronts of our American towns are disgraceful in almost every instance. Hartford, which blazed a path, a half-century ago, toward city parks, is blazing a new path to-day in the creation of a water front that shall typify and not disgrace the dignity and beauty of the city.—*Harper's Weekly*.



LLOYD WARREN
PRESIDENT

L. E. JALLADE, SECRETARY
178 Fifth Avenue, N. Y.

LLOYD WARREN
3 East 33d Street, N. Y.
CHAIRMAN COMMITTEE OF EDUCATION

ANNOUNCEMENT

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The address of the Committee on Education will remain as before, No. 3 East 33d Street.

CLASS B. ORDER PROBLEM

Judgment Nov. 19, 1908

A PASSAGEWAY

Henderson, H.	.....	New York	.....	Atelier Prevot	.....	Placed M.
Schwartz, Philip	.....	"	"	"	"	"
Gander, J. J.	"	"	"	"	Placed M.
Thetford, Jas. V.	"	"	"	"	M.
Ashmead, John	"	"	"	"	M.



A FREQUENT TYPE OF GERMANTOWN HOUSE



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A FREQUENT TYPE OF GERMANTOWN HOUSE



CHAPEL, VIENNA

HERR OTTO WAGNER, ARCHITECT

of building construction, classed if possible according to the material, and that the reports shall be placed at the disposition of the specialists."

Friday afternoon excursions were arranged to Klosterneuburg Monastery, to Schonbrunn Palace, and to Castle Kreutzentein, the seat of his excellency Count Wilczek. The restorations of this early Gothic castle of which, until thirty years ago, there remained little more than the foundations, has been carried out with great thoughtfulness and ability in every detail, and shows perfectly how the daily life of its occupants was passed and what the methods of defense were.

It is a veritable museum filled with furniture, cooking utensils, arms, and munitions of war, in short with everything that was necessary to the life of feudal days. These various objects which Count Wilczek has spent many years in collecting are in some cases original antiques procured from the neighboring peasantry, and in others specially prepared copies from museums. One afternoon was far too short for more than a cursory glance at this wonderful place, and it left a longing in the heart of everyone, especially after the cordial reception of His Excellency, to return some day and linger and study to the heart's content.

In the evening a dinner and fête on the Kahlenberg was given the congress by the Society of Austrian Engineers and Architects, on the sixtieth anniversary of their organization. On that evening the Americans present at the Congress were entertained by the American Ambassador.

The Ambassador took a lively interest in the affairs of the Congress, and was a great aid to the American committee.

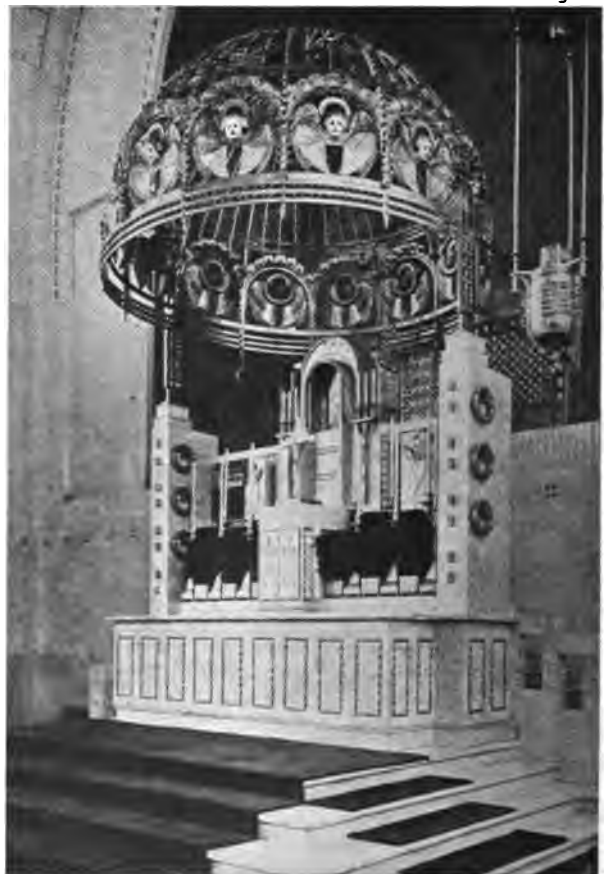
Saturday morning, a meeting of the Permanent Committee was held. The members of the American section of this committee are: Francis R. Allen, Glenn Brown, William S. Eames, George B. Post, and George Oakley Totten, Jr. At this meeting Daniel D. Burnham of Chicago was elected a member of the American

section, to fill the vacancy caused by the decease of W. L. B. Jenney, and Francis R. Allen was elected a vice-president of the Executive Bureau of the Permanent Committee.

It was decided by the Permanent Committee, on the invitation of the Italian Government, to hold the Ninth International Congress of Architects, in Rome, October, 1911.

On Saturday a final excursion was arranged to the country lunatic asylum, "Am Steinhof," whose remarkable chapel was designed by Herr Otto Wagner. In the afternoon Herr Wagner kindly conducted a party around the new Post Office Savings Bank, one of the most striking modern buildings in Vienna. His motto is Truth and Suitability, hence in his design every feature explains itself, and nothing superfluous is admitted. The entire façade, six stories in height, is studded with aluminum-headed nails, one and a half inches in diameter. This he explains as follows: He was obliged to adopt the most rapid method of building, so the construction is of brick. This material is, however, not suitable for his purpose, so he faced the brick with $\frac{7}{8}$ -inch slabs of marble, and artificial stone, about 15 inches square, and secured each slab to the brick with a 5-inch nail, which pierces the center of the slab. The nails fulfil the double purpose of holding the slabs in position till the cement bed hardens and of bearing witness that the stone is not constructional.

Two other remarkable houses by Herr Wagner are built in Wienziele. These are blocks of flats, seven stories in height, with no moulding or projection or



ALTAR OF CHAPEL AT VIENNA

HERR OTTO WAGNER, ARCHITECT

horizontal lines on their long façades, except interrupted sills, main cornice and uninterrupted balcony to first floor. One block is faced with cement, bare of all ornament except at the angles and upper story, where the spaces between windows are filled with boldly-modelled foliage painted gold. This forms a kind of interrupted frieze to the simple though greatly projecting cornice. The effect is striking and pleasing and quite unique. The other block is equally flat and devoid of mouldings, but the entire surface is clothed with pale buff vitrified tiles, over which are strewn heroic sized, rose-colored poppies, with blue poppy heads and green foliage. These colors are reproduced in the greatly overhanging cornice, in which color decoration takes the place of moulded members. This artificial facing presupposes a construction of ferro-concrete.

The festivities of the Congress in Vienna were closed with a farewell banquet at the Continental Hotel on Saturday evening.

On the following day many of the members, on the invitation of the Budapest Society of Architects, embarked at an early hour on the day boat down the Danube, for Budapest, arriving in the evening. They were cordially welcomed by the Hungarian Architects, and two delightful days were spent in the very interesting city. An open air banquet was tendered the members. At the close of the dinner adieus were said to friends from many lands, all agreeing it had been a wonderful Congress, and the visit delightful in the two great capitals of Austria-Hungary, and promises were exchanged to meet at Rome in 1911.

ILLUSTRATIONS—TWO SMALL BANKS AND AN IMPROVED TENEMENT DESCRIBED BY WILLIAM EMERSON, ARCHITECT

The requirements of the two branches of the 19th Ward Bank were so similar that except for a difference in size the problems presented to the architect were identical.

Judged from the outside both were sure to be flanked by buildings of so much greater height that, unless a treatment of absolute simplicity in line and motive were employed, they would look out of scale and lost in the dark rows of brownstone houses that adjoined them. The Greek Doric order was chosen as best suited to overcome this difficulty, because of its innate dignity and perfect simplicity; and was carried out in a buff limestone to further mark the contrast with the dull monotony of color on either side. A still further reason for uniformity of treatment in the two façades was the desire to make the observant public notice that both buildings were branches of the same central organization.

On entering the buildings the most salient feature is the lighting, which, in so far as the public space and cages are concerned, is entirely from overhead, being again a direct consequence of the size of the banks in relation to their present and probable future neighbors. The large wall spaces have in both cases been treated with pilasters of very slight relief, so grouped as to make the skylight the important feature of each room, without impairing the intrinsic value of these generous wall areas. Here, as in all else within, the detail has been

kept as nearly Greek in character as the modern requirements of the buildings would permit.

The plans presented are of two distinct types, the width of the lot in 72nd Street (20'-0") being so restricted as to leave available floor space for the tellers' cages on only one side of the public space, whereas in 34th Street, with 36'-0" to use, a symmetrical treatment was possible. Both plans, however, share two characteristics in common, namely the importance given to the Interest Department and the placing of the vaults so that their massive doors shall swing open to the unobstructed view of the bank's clients. Space for bookkeepers is found in both cases at the back, and locker and toilet accommodations for them and the other employees is provided in the basement. Ample leeway has been allowed for an anticipated increase in the working force, and foresight in this direction has already been justified, although one branch has been in operation but a year and the other a year and a half from the date of writing. The assistance of the officers of the bank and their representatives has largely contributed to such success as has been achieved in the solution of the problems at hand.

The planning of an improved tenement when conscientiously considered is essentially a practical problem; the necessity in this particular case of making the building of fireproof construction accentuated this feature and rendered the task of securing an adequate return on the investment doubly difficult.

The plan resulted from the needs of the locality, where it was found that there was much greater demand for two and three room apartments than for those of four and five rooms; there are accordingly four two-room, four three-room, and one four-room apartment on each floor above the ground floor. This distribution gave twenty-four rooms to a floor, which was found to be necessary in order to secure an adequate rental. Each apartment is provided with a separate toilet, hot and cold running water for kitchen tubs and sink, and steam heat. These facilities have been furnished at a rental of from ten to twenty-two dollars a month, according to the size and locality of the apartment, and include furthermore the use of showers and bath tubs on the ground floor and of a separate storage compartment in the basement. A careful inspection of the plans will show that an effort has been made to provide through ventilation in the apartments, and six of the nine apartments in each floor can enjoy a free circulation of outer air through their rooms.

In the front such simple devices as could be used to improve the general appearance, without adding to the expense, have been employed; the balconies serve to reduce the apparent height, and the string courses of different colored brick in the first two stories serve the same purpose, while the brick quarry pattern employed and the grouping of the windows help to differentiate the building from its more commercial neighbors.

Those interested in the betterment of the conditions under which tenement house dwellers are forced to live in our large cities will be glad to know that it has been possible to place conveniences of the class mentioned above within reach of people of small means and yet make a net return to the owners of a fraction more than five per cent.

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December 16, 1908

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IN an editorial printed in our December 2d issue we quoted at some length from a letter addressed to the Board of Aldermen of New York City on the subject of lofty buildings. Through inadvertence the paragraph giving credit for this letter was made to read "Committee on Charter Revision of the Municipal Art Commission." This should have read "Committee on Charter Revision of the Municipal Art Society." We regret the error which thus deprived the volunteer organization of possible credit to which it was entitled and imputed to the official body opinions which it has not expressed. As a matter of fact the Municipal Art Commission has not yet taken a position, so far as any formal public expression goes, on the subject of the limitation of the height of buildings.

WE have always welcomed intelligent commentary, and should dislike exceedingly to be classed with those intolerably clever publications that hold themselves beyond the need or possibility of instruction. But while we look kindly on well-meant criticism we naturally enough feel inclined to inquire somewhat into the soundness of the premises from which the censorious utterances follow. For example, it seems well worth while to examine carefully the grounds upon which a criticism that recently appeared in the editorial

columns of an esteemed contemporary was founded. In it we were taken severely to task for publishing some months ago a signed article contributed by an undeniably talented and honored member of the profession. That the article in question should not meet with universal approval was of course to be expected. How few expressions of opinion on technical subjects do for that matter? But why we should be denounced in such unmeasured terms for giving publicity to the opinions of one whose education and achievements would seem to entitle him to be heard, is a little more difficult of comprehension.

THE reasons given appear wholly fallacious and inadequate. As stated or indicated they are; first, We have aided in promulgating false doctrine; second, By so doing the cause of a long-fought-for but hard established form of construction has suffered incalculable injury, due to the implicit faith and confidence accorded by the profession to all matter appearing in THE AMERICAN ARCHITECT. As to the first count we would observe that the truth or falsity of the doctrine appears to be largely a matter of opinion. So far as is generally known it has not yet been given to our man to know all things even in an architectural or structural way, and it would seem desirable to permit a free interchange of ideas among members of the profession. Any other course would apparently indicate a narrow and perverse spirit stultifying in its effect and repugnant to the healthy growth that demands light from all quarters. If the first portion of the second cause for censure is sound it means that the form of construction in question, after twenty-five years of nursing and encouragement, confessed by our contemporary, is still in such a feeble and delicate state that the mere publication of an article calling attention to existing examples of construction differing from it will cause it untold injury. Can this be true? Only organic weakness could account for such a condition and that we believe would scarcely be admitted. While the latter portion of the second ground for criticism would be flattering to THE AMERICAN ARCHITECT, if true, it lacks apparently that essential element. Our contemporary's view would imply that through ignorance or lack of discrimination architects might not be depended upon to select that which would most nearly serve in each individual case. In other words it is considered dangerous and ill-advised to illustrate and describe some forms of construction on account of the liability of credulous architects adopting them without question presented in THE AMERICAN ARCHITECT, even in cases where they were unsuitable. The acceptance of this view would place architectural publications in such a snobbish position of assumed superiority over the profession that we are unwilling to consider it. It is unworthy of our amiable contemporary, and the high standard of professional journalism hitherto maintained by it. In fact we are a little perplexed at the unusual attitude of our neighbor, and feel inclined to look further than the editorial room for the inspiration of the preachment addressed to us. Can it be our esteemed contemporary has unconsciously permitted its columns to be exploited by some self-seeker?

THE AMERICAN ARCHITECT AND BUILDING NEWS

Vol. XCIV.

WEDNESDAY, DECEMBER 23, 1908.

No. 1722



VIEW IN THE EXHIBITION OF THE WORK OF
AUGUSTUS SAINT GAUDENS

CORCORAN GALLERY
WASHINGTON, D. C.

The Forty-second Annual Convention of the American Institute of Architects, Held at Washington, D. C., December 15, 16 and 17, 1908.—The First Day's Proceedings

WHEN President Gilbert of the American Institute of Architects, on the morning of December 15, in the Assembly Hall of the New Willard Hotel, called the forty-second convention to order, he inaugurated the closing scenes of what has doubtless been one of the most successful and fruitful years in the history of the Institute. Successful, because under the safe and sane administration of President Gilbert, the Institute is, if possible, more firmly established as the representative organization in America. Fruitful, because of its great achievement in bringing about much that is wisest and best in the interest of the profession.

There was assembled, of delegates and alternates and visiting members, more than one hundred and twenty-five, and from the outset the sessions were

marked by an earnestness that was a portent of things to be accomplished.

Owing to the fact that Major Morrow, of the Board of Commissioners of the District of Columbia, had been unexpectedly called before the Appropriations Committee of the House of Representatives, he was unable to make the address of welcome to the delegates as was expected.

President Gilbert's address, which was many times interrupted by applause and received with much attention, was as follows:

"It has become the custom for the president of the Institute to present at the opening session of each convention an address or message summarizing the work in the past or suggesting work for the future. And, reluc-

tant as I am to consume the valuable time of the convention, I comply, in the hope that it will not be amiss to suggest some general ideas for your consideration.

Each year of the Institute's life bears a general similarity to each preceding year, and yet each year brings new problems, or the more complete solution of old ones; and finds the Institute growing in spirit, larger in numbers, stronger in faith in itself and with a rightly increasing influence both on the art we practice and on the relations of the public and of the government to that art.

If we compare the broad influence of the Institute to-day with even that glimpse of the "Golden Age" some fifteen years ago, when the Columbian Exposition was built, by the leaders of our Institute; and we achieved governmental recognition as a profession, through the passage of the Tarsney Act; we will see the sure advance of a great national organization to a truly national scope—and so seeing we will realize the responsibilities that come with increased authority. Let us grow in wisdom as we have grown in numbers, in power and in material wealth.

I forbear to make a comparison in detail or to furnish statistical records, but the evidence is before you in the fact that though the wise councils and unselfish endeavor of the Institute we have come to be the adviser, and as need arises, the respected arbiter in matters of the gravest importance. *Then* it was with difficulty that we obtained a hearing from either the public or the government. *To-day* we are welcomed in the councils of all

those who sincerely desire to do well in matters within the sphere of our profession. Our great and growing cities, our States and the national government itself, all call upon us for professional counsel, and approach the subject of architecture and the other fine arts from a standpoint largely influenced thereby.

The President of the United States, in calling together that notable conference of the Governors for consideration of the conservation of the national resources of our country, invited the American Institute of Architects, as one of a few organizations of national scope to take part therein, and we have now an Institute Committee acting with the Conservation Commission which grew out of that conference. This commission, will, I believe, become one of the greatest powers for national good that has ever been created.

Many of the States are considering laws for the licensing of architects, some have already passed such laws, whether with wisdom or not will only be proved by experience, but for the present it may be said that it is an experiment intended to be for the protection of the public and of the architects alike.

Several of our cities have official consulting architects to advise as to the best methods of procedure and to guide their officials in all matters of design.

Civic associations and municipal authorities are calling the members of our profession to assist in the study and betterment of civic conditions, the designs of streets, parks, bridges and public monuments and I need not add that the members of the Institute have responded



VIEW IN THE EXHIBITION OF THE WORK OF
AUGUSTUS SAINT GAUDENS

CORCORAN GALLERY
WASHINGTON, D. C.



CASS GILBERT
PRESIDENT

AMERICAN INSTITUTE
OF ARCHITECTS

cordially in assisting in these endeavors for the general good.

Our relations with individuals and corporations, with the public and with the Government have been fostered and strengthened and we have won the confidence of them all because we have endeavored to deserve it.

Abroad, the Institute is recognized as one of the greatest organizations of its kind—and our affiliations with foreign societies of art, science, and letters are growing closer from year to year.

The Congress of Architects in London of 1906, and in Vienna of 1908, and the international incidents of the last convention of the Royal Institute of British Architects have demonstrated the increased respect in which our Institute is held and promise a closer relation with consequent mutual advantage for the future—such closer bond of sympathy and understanding between American and foreign societies of like intention has not been without encouragement from the National Government, however, indirect or incidental, and in a large sense makes for a better understanding between nation and nation, weaving one more strand in the fabric of amity that makes for the peace of the world.

Our committees have chosen as the principal topic for this convention the relations of the arts to the Government, and you will be invited to consider, and act on that proposition that it is desirable for the art works of the Government to be under the general control of a Bureau of the Fine Arts. I will not anticipate the report of the committee by more than this brief reference to the subject, but may add that in all of our discussion of it

we must bear in mind that we look at it from only one side, viz.: that of the artist and the professional man, but that before such a proposition can be enacted into law it will be subject to careful legislative scrutiny; it will be considered from the standpoint of economy and administration, and many objections will doubtless be raised; many corrections and amendments will be made. But the outcome will be progress.

Let us do our part with wisdom and care, let us consider what we ought to do and balance it off against what we *can* do. Let us not forget that we are citizens with the citizen's duty to do, so far as we can do it within our own sphere; and with the citizen's right to suggest or demand; but that we are neither statesmen nor legislators and that to them is committed the responsibility for the enactment of laws and for the finding of ways and means.

The convention will probably consider among other things the ever present and intimate topics of professional ethics, competitions and schedules of charges. Let us deal with all these matters in a very broad way, and be guided by generous consideration for the *other* point of view, whatever it may be. Let us be generous, even to ourselves.

In the matter of ethics, I quote an extract from the constitution and by-laws of the Civic Club of New York:

"We stand:

"For knowledge and progress; for rational enjoyment and for whatever is right.

"No man can grow unless he has room in which to



GLENN BROWN
SECRETARY-TREASURER

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OF ARCHITECTS



VICTORY

AUGUSTUS SAINT GAUDENS

grow; we will not crowd the next man, but we will not be crowded by him. We will therefore give and take, but we will not compromise nor temporize with wrong or with wrong-doers. We will leave the hiding places to the weak and will fight for them and for ourselves in full view of all.

"We will cultivate friendship with all, but we will not fear the enmity of those who oppose our principles."

Let us have an ethical code so broad that it will cover all right conduct.

Moral right is the basis of all ethical codes. We cannot create moral right or wrong by fiat of a convention. In moral law, what is right to-day was always right. It is only by instinct, experience and wisdom that we perceive moral law as applied. We do not always perceive accurately, hence our codes change with the years and with the conditions. It is character, not codes, that determines a man's life and his relations to his neighbor.

Let us beware of the hasty adoption of a narrow code which would place the technical stigma of "unprofessional conduct" upon honorable practitioners, or limit the proper activities and usefulness of our members.

Let us sternly rebuke those forms of practice which infringe on moral right, which place selfish interest above the general good; or tend to lessen the dignity or lower the tone of the profession. And with just and well-considered rules of conduct, let us hold *ourselves* as well as our neighbors to strict accountability for their fulfillment. In short, let us have the right code or none at all! The Institute is safer relying on the moral sense of its members than upon an inefficient or unwise code which could not be enforced. Our committee will be guided by your decision; on you rests the responsibility.

In general the same reasoning applies to the matter of the schedule of charges. That some modification is desirable is obvious to all. We cannot hope to have a schedule of charges that will fit with mathematical precision and equal justice all conditions, but we can have a schedule that will form a starting point—and that shall represent a reasonable minimum. It must be a business paper, simple, direct and to the point. It must be self-evident, comprehensive and devoid of argument; inconclusive statements, fugitive suggestions or elusive phraseology have no place in such a document. It must be a basic minimum statement leaving reasonable variations to local adjustment.

That the demands upon the architects both in professional service and in the cost thereof have enormously increased is a well known fact. The schedule when adopted some forty years ago represented fair remuneration for that time, but it does not represent fair remuneration now.

On the subject of competitions there is much to say—and much that had better be left unsaid. Probably 90 per cent. of our professional difficulties have grown out of this one fruitful tree of discord. Let me point out, however, the economic side of the question.

The profession is expending vast energy and an enormous sum each year fruitlessly, foolishly, blindly in maintaining this wasteful system. It has been impossible to obtain data or to form anything like an adequate estimate of the cost. We do know, however, of specific instances which may be quoted as examples. Let me quote only one as typical. The Government established a competition within the last year wherein some one hundred and thirty competitors took part, expending in addition to their own time and service, about \$65,000. The fees paid to the prize winners and to the expert advisors amounted to about \$5,000. Loss \$60,000. The total gross fee of the successful competitor estimated on a per centum of the proposed cost of the building is about \$12,500 and his net estimated profit from this fee about \$4,500. Net loss to the profession about \$55,000. And in the end, I am credibly informed, the jury's award was disregarded and even the plan finally selected had to be revised.

The Government refuses to receive from a building contractor any value not required by the contract, without paying for it; and yet—strange inconsistency—the laws or customs are such that it does not hesitate to accept such value from us. The competition system has become so widespread that now it applies not only to Government buildings but to all other classes of buildings. I think it would not be too much to say that the architects in this country annually expend over \$1,000,000 in competitions from which they receive no return. How long can the profession stand this drain? And this is not all—to foot up the total you must add the profits that should have accrued from time and money expended, the wasted time and effort, the neglect of other duties, the depressing—the disheartening disappointments and the dissensions that ensue. If fault there be, it lies in ourselves. The correction is in our power. The public is eager to understand and ready to accept the professional man's point of view of it—that view—is sane and consistent.

The public does not know, and cannot understand this great waste. It is well that we should understand it and take serious thought.

We have during the past year sought information as to the amount of money expended in building in the United States for a period of years. Inquiry has been made of the authorities of every city in the country of over 20,000 inhabitants. We have asked like information from the Treasury Department and from the Census Bureau. We find that city records are not available in all cases, but have collected such information as they could give us. The Treasury Department's reports are, of course, clear and comprehensive so far as works under its charge are concerned. The Census Bureau could give us no information at all.

With the development of the Institute come larger duties and a natural demand for a larger working capital. Our usefulness is constantly hampered for lack of funds. Our committees have to limit their work by the closest demands of economy, and many useful projects must be neglected for this reason. The Institute should take a greater part in educational work, not only for students of architecture, but for students and apprentices in the lesser arts and in the trades. We could do most valuable work for the world if we could have under our supervision art guilds and trade schools, if we could direct the work of the young mechanic or artisan who labor in the building trades. Give him a knowledge of his art, inspire him to its finer development and you make him a better artisan and a better citizen. Under the patronage of the Institute, lectures, exhibitions, circulating libraries, scholarships, and the like should be established. The Institute should take an active part in research and archeology, in library and museum work and in many other forms of development from which all the people as well as ourselves would derive benefit. But all this means the expenditure of a great sum of money annually. It means an endowment, and a large one; an endowment of which we would be only the trustees, not the beneficiaries. We cannot look for such an endowment with a selfish end in view, and its acquisition would increase, not lessen, our labors and responsibilities.

In maintaining our place in the professional world, we must not forget that it is the student of to-day who is the practitioner of to-morrow. We should therefore act helpfully toward the younger men. Share with them our successes, give them their chance as we have had ours, and foster their reasonable ambitions for professional opportunity and success. So win their confidence by generous and helpful acts that they will naturally seek your counsel and be guided by your experience. They will richly repay you by loyal support of those principles and ideals for which you stand. When you receive a young student into your offices, bear in mind that it is your duty to him and to all concerned to see to it that he is fit for the future work of an architect. If you cannot teach him yourself put him under charge of someone who can.

Give to all the largest opportunity consistent with their ability, but carefully select those who are best fitted by natural inclination and advise the others to seek another occupation. Encourage those who give promise of fitness, but reject the inefficient, the indolent,

or the incompetent. And so build up a strong body of practitioners who can be useful to themselves and to the world. To this end then I recommend such action by the convention as will foster and encourage the educational side of our work both in the matter of ethics and design. If this can wisely be accomplished by a closer affiliation with the other societies, or by establishing a junior grade, or grade of aspirants within our own Institute, let us so proceed.

I suggest a closer union of our chapters and a system of correspondence between them. Topics of discussion, such as the arts and the laws and theories of practice, might be arranged in series so that there would be concentration of effort. If the members of the Institute think and work along the same lines they will act as a unit. They will each develop the other. "As one lamp lighteth another and groweth not less, so nobleness enkindles nobleness."

But, above all, remember that we are engaged in a great creative art, and that in the last analysis we stand or fall by our success as creative artists. Let us cultivate, then, that finer side of our lives and maintain those high ideals which have ever made our profession the recorder of the world's progress, the conservator of its rarest treasures, and the creator of its noblest monuments.

At the end you may say with Stevenson, "I know what pleasure it, for I have done good work."

This forceful and comprehensive address was received with the liveliest satisfaction. The broad-minded and dignified statement of the objects and aims of the convention served as the keynote to subsequent deliberations, and in like manner President Gilbert's performance of the arduous and trying duties as presiding officer made possible the large measure of accomplishment.

During the reading of the president's address the poor acoustic qualities of the convention hall were apparent. This fault was noticeable at all times and taxed the voices of the speakers.

The various committees were appointed, following which the report of the Board of Directors was read and approved, as was also that of the Treasurer and Auditing Committee.

A synopsis by the Secretary of the reports of the various Chapters was then presented and ordered printed in the proceedings.

The reports of the various standing committees were then read by their respective chairmen.

Of these reports, such as are of general interest will be published in full in a later issue.

During the presentation of the reports, there was at times much discussion as to the interpretation of the by-laws, particularly as to proper procedure in making nominations for officers.

This discussion was prolonged, consumed valuable time and served no good purpose. It would seem as if the convention could more profitably deal with the larger and broader side of professional life, than to confine its minutes to a useless discussion of the by-laws.

The president then called for the report of special committees. Mr. R. Clipston Sturgis, Chairman of the Committee on Competitions, prefaced his report with the following remarks:

Mr. President and Gentlemen of the Institute. I should like to say just a word or two of introductory

remarks, if it is not out of order, before reading the regular report of my committee. The President touched very lightly upon the subject of competitions—it is a subject that one is inclined to touch rather lightly. It is a good deal like striking a man-eating tiger. But there was one thing that he said that was related to what was said by this convention last year, and is not altogether covered in the report of my committee, and that is the reason that I should like to say a word before I read the report.

He spoke of the danger of having on our minutes a resolution which might put a man, who is in absolutely first-class standing, under a charge of unprofessional conduct, and I want to read, before I read my report, the resolution which this convention passed last year.

Now, my committee thought that was a very simple provision; that practically it said that any competition that you are not ashamed to have your fellow architects know that you are going into, you can enter under these terms, because any competition that you are not ashamed of you can very readily get some other member of the Institute to endorse and approve, and that is all that this resolution really meant, it being merely a first step; that if that first step were taken, the various Chapters in their own communities could, after they had taken steps that would naturally follow, try and govern the competitions that were held, but they say merely to try and have that first step made with the approval of the convention; and you voted that resolution last year and nobody has paid any attention to it to date. (Laughter.)

At the afternoon session, the reports of the various special committees were continued, and again much time was consumed by a rambling discussion of the interpretation of the constitution and by-laws.

This session concluded with the report of the committee on the VIII International Congress at Vienna, Austria. Mr. George Oakley Totten, Jr., chairman of this committee, read the report which was illustrated by lantern slides. This report was substantially the same as that covered by Mr. Totten's article which appeared in issues of December 9th and 16th of the AMERICAN ARCHITECT.

The evening was devoted to the memorial meeting in appreciation and exhibition of works of Augustus Saint Gaudens, by the Institute.

This meeting in its inception, the perfection of its details, and its successful consummation, marks an epoch in the history of the Institute.

It can be truthfully stated that no greater tribute has ever been paid to the memory of an American artist, and the fact that it was conducted by the Institute to so successful an issue, should be a source of great pride to every architect in America. It was a fitting ending to a year of dignified effort and the committee in charge are deserving of the highest praise.

Much of the detail was planned and executed by Mr. Glenn Brown, the Secretary of the Institute.

His efforts to insure the success of the convention and everything connected with it have been unceasing. He might well regard with some pride and self-gratulation the brilliant assemblage gathered in the beautiful Hemicycle of the Corcoran Art Gallery, on the evening of the 15th. A Washington paper, describing this meeting says:

"It is not likely that any more brilliant or artistic society and artistic event will be celebrated than was that at the Corcoran Gallery of Art last night, when the entire building, and especially that part of it devoted to an exhibit of the work of the noted sculptor, Augustus Saint Gaudens, was turned over to the American Institute of Architects for a memorial meeting to the sculptor.

"The works of Saint Gaudens are displayed in the lower hall of the gallery, and there the guests, admitted by invitational card only, were received by a specially appointed committee of ladies, comprising Mme. Jusserand, wife of the French Ambassador; Mrs. James Bryce, wife of the British Ambassador; the Baroness Takahira, wife of the Japanese Ambassador; Mrs. Cass Gilbert; Mrs. Robert Bacon, wife of the Assistant Secretary of State, and Mrs. Glenn Brown."

This exhibition of Saint Gaudens' work impressed the fact of its monumental and typically American character. Only the earliest arrivals had opportunity to carefully inspect the exhibition, the halls were so speedily crowded by the vast throng of people.

At ten o'clock the President of the United States reached the Gallery, and following him came Secretary of State Root, Ambassador Bryce, Ambassador Baron Takahira, the Ambassador from Brazil, Mr. Nabuco, the Mexican chargé d'affaires, and other speakers.

At the request of President Gilbert, Secretary of State Root presided at the meeting. In accepting, Mr. Root spoke briefly, and referred to having known Saint Gaudens in Rome, some forty years ago. He dwelt in a forceful way on the influence of the work of Saint Gaudens on American art. He then introduced President Roosevelt.

President Roosevelt, who spoke with his accustomed earnestness, said:

"Augustus Saint Gaudens was a very great sculptor. This makes all the world his debtor, but in a peculiar sense it makes all his countrymen his debtors. In any nation those citizens, who possess the pride in their nationality without which they cannot claim to be good citizens, must feel a particular satisfaction in the deeds of every man who adds to the sum of worthy national achievement.

"The great nations of antiquity, of the Middle Ages, and of modern times, were and are great in each several case, not only because of the collective achievements of each people as a whole, but because of the sum of the achievements of the men of special eminence; and this whether they excelled in warcraft or statecraft, as roadmakers or cathedral builders, as men of letters, men of art, or men of science. The field of effort is almost limitless; and preeminent success in any part of it is not only a good thing for humanity as a whole, but should be especially prized by the nation to which the man achieving the success belongs.

"Particularly should this be so with us in America. As is natural, we have won our greatest success in the field of an abounding material achievement; we have conquered a continent; we have laced it with railways; we have dotted it with cities. Quite unconsciously, and as a mere incident to this industrial growth, we have produced some really marvelous artistic effects.

"Again, some day people will realize that one effect of the 'sky-scrapers' in New York, of the massing of

buildings of enormous size and height on an island surrounded by waterways, has been to produce a city of singularly imposing type, and of unexampled picturesqueness. A great artist will yet arise to bring before our eyes the powerful irregular sky-line of the great city at sunset, or in the noonday brightness, and, above all, at night, when the lights flash from the dark, mountainous mass of buildings, from the stately bridges that span the East River, and from the myriad craft that blaze as they ply to and fro across the waters.

"Our success in the field of pure art, as in the fields of pure literature and pure science, has been behind the success we have achieved in providing by the practical application of art and science, for bodily comfort, bodily welfare, and for the extraordinary industrial mechanism which forms the framework and skeleton of our modern civilization. The twilight of letters continues; but much is now being done in the field of art; and Saint Gaudens was an artist who can hardly be placed too high."

The President referred at some length and with much detail of description to Saint Gaudens's work in modeling the new coinage. Standing where his eye could command a view of almost the entire exhibit, he dwelt in vivid description of the impression created by the more important examples of Saint Gaudens's work, and closed his address with the following tribute to his great genius:

"Greatest of all is his Lincoln. Lincoln was the plain man of the people, the people's President; homely, gaunt, ungainly; and this homely figure, clad in ill-fitting clothes of the ugly modern type, held one of the loftiest souls that ever burned within the breast of mankind. It is Saint Gaudens's peculiar quality that, without abating one jot of the truthfulness of portrayal of the man's outside aspect, yet makes that outside aspect of little weight because of what is shown of the soul within.

"We look at Saint Gaudens's mighty statue of the mighty Lincoln, and we are stirred to awe and wonder and devotion for the great man who, in strength and sorrow, bore the people's burdens through the four years of our direst need, and then, standing as high priest between the horns of the altar, poured out his own life-blood for the nation whose life he had saved.

"In this quality of showing the soul, Saint Gaudens's figures are more impressive than the most beautiful figures that have come down from the art of ancient Greece; for their unequalled beauty is of the form merely, and Saint Gaudens's is of the spirit within."

The scholarly address of Ambassador Jusserand, who has many times spoken to gatherings of architects in this country and abroad, received the closest attention and awoke among many present visions of earlier years when they were students in Paris. His appreciation of Saint Gaudens was received with the liveliest satisfaction.

M. Jusserand said:

"All republics are not marked on the map. Some of the greatest ones which include citizens of every origin are not to be found in atlases, and yet they have got well defined frontiers. One of these great republics has for its frontiers the limits which divide knowledge from ignorance, conscience from trickery, good taste from bad taste, genius from dullness. It is the republic of fine arts.

"This republic has several capitals. One of them consists in a series of buildings, partly new, partly old, that stretch from the Quai Malaquais to the Rue Bonaparte, with the reverend effigies of Poussin and Puget on pilasters at the entrance, the Ecole des Beaux Arts of Paris. An old established institution founded on the republican principles of equal chances for all, when France was still a monarchy; very much so, indeed, as her king was the sun king, Louis XIV. The Ecole dates back from 1648, and the famous Prix de Rome was founded in 1666.

"To this capital came in 1867 a young American who had worked till then as a cameo cutter in New York, and who had over most of his compatriots the great advantage of speaking fluently the language of the place, for, born in Ireland, brought up in America, he was the son of a Frenchman. He was called Augustus Saint Gaudens.

"He took at once to the manners of the great republic of fine arts as practiced at the Ecole and in its various ateliers. Those manners are characterized by a great freedom, much good fellowship, and an extreme fervor in the attempt to learn and improve. Most of the students are very poor, but they do not mind; they are too busy with their work, and their merry and optimistic dispositions are far too pronounced for them to pay much attention to such trifles; they laugh away and dream away and work away all thought of poverty and material discomfort. To learn, to show ability, to rise in their peers' estimation is for them the main point. In such a milieu Americans find themselves quite at home. They are treated from the first as friends and brothers; their successes are warmly applauded, and they are not spared good-humored jokes if some of their early attempts prove failures. One of Saint Gaudens's compatriots and best friends told me that in his early days at the Ecole, when his work was not up to the mark, his fellow-workers at the atelier would come and stare and laugh, and say: 'Comme on voit bien que tu es un Peau Rouge!' (How well one sees that thou art a red skin Indian!) Red Skin left the school one of its most popular and most successful members.

"While good fellowship results in much merriment, the teaching there is nothing short of austere. No trifling, no work done anyhow, is tolerated, in sculpture especially, where trickery is a worse sin than in any other art, and where the artist disposes of only those elements, form, and the play of light and shadow. The school teaches method, sincerity, conscience, the hatred of every sham, the respect of nature, the holiness of work. Some are aggrieved that it pays so much attention to technical qualities, but the school is quite right; all it has to do, all it can do, is to educate the hand and the brain; it teaches how to handle the tools; it does not pretend to give lessons in genius.

"From the first, Saint Gaudens was at home there, and there from the first he left his mark. He soon became the pride of his atelier. As recorded by one of his friends, it was soon a common occurrence to hear people say: 'So and so is very well; but do you know Saint Gaudens?' By that austere teaching given at the school he amply profited, as also of its breadth of scope. For it is considered there to succeed in one art one must have notions of the others—sculpture must know art.

something of her sister painting and of her sister architecture; simultaneous studies are greatly encouraged.

"Saint Gaudens was by nature predisposed to profit by such teachings. Like men of the renaissance, he had a mind open to all beauty; hence his cameos, his plaques, his coins, his drawings, his pictures, his statues, and the taste with which he knew how to make his statues accord with the surrounding architecture. For all this the Ecole des Beaux Arts gave him the necessary teaching; what the Ecole could not give, nature had given him—genius.

"He left the school, but did not leave Paris forever. That enthusiasm for art and for serious work that is, so to say, in the air, which even laborers and workmen feel, was for him a pleasant stimulant. So that he came again a second time; and it is there and then that he finished his justly famous Farragut. He returned a third time in 1897, and remained three years, working at his Sherman, his Robert Louis Stevenson, his figures for the Boston Library. It was then that he became intimate with that admirable Paul Dubois, whose Joan of Arc is perhaps the grandest monument raised to the maid who appeared at the saddest hour in our history, and to whom we owe that we are still a nation.

"Between Paul Dubois and Saint Gaudens, in spite of many differences, there was much in common; same passionate search for accuracy in form, combined with the highest idealistic aim; same natural facility to please others and impossibility to please themselves; hence, their ceaseless thoughts and after-thoughts, variants and renewed attempts of all sorts. Hence, also, their fame, the respect which surrounds their memory, the importance of the example left by them."

Following the French Ambassador, the Japanese Ambassador, Baron Takahira, took up the theme of Saint

Gaudens' genius, and interestingly traced its growth and development, as viewed by the people of his country.

Ambassador Bryce, of Great Britain, in the course of his remarks said:

"It is not for me to discuss the place which Saint Gaudens will hold among the famous artists of the nineteenth century. Sculpture, indeed, has, since the great Italian masters died out nearly four hundred years ago, not held so supreme a place in art as it did in the ancient world.

"If we are to ask in what the excellence of sculpture consists, may we not distinguish three things—first, the exactitude with which it reproduces nature, especially in portraiture; secondly, the pure beauty of form, and, thirdly, the imaginative quality through which it speaks to our intellect and our emotions?

"When we talk of imagination in a work of art we mean that in which the artist through his work addresses the minds and hearts of those who see it and makes what we call an impression upon them. The combination of these three kinds of excellence, truth to nature, beauty, imagination, is nothing less than perfection. Any one of them possessed in a high measure constitutes greatness. Saint Gaudens had all three, but, as it seems to me, shone especially by his imaginative power."

The proceedings of the second and third days will be described at length in our next issues.

This convention, so far reaching in its importance to the profession, was significant in the earnestness displayed.

Those whose privilege it was to be on the floor during the sessions must have been impressed with the fraternal feeling so generally shown.

President Gilbert, Secretary Brown and their associates may take to themselves a great measure of credit for the work done.

THE EXHIBITION OF THE NATIONAL ACADEMY OF DESIGN AND THE NATIONAL SCULPTURE SOCIETY

The joint exhibition of the National Academy of Design and the National Sculpture Society, opened in the Fine Arts Building and Gould annex in this city on December 11th, is probably one of the best and most satisfying showing of the work of the artist painter and artist sculptor, seen in many years.

In the galleries of paintings there is a seriousness of purpose and truthfulness of expression that means much to art in America. The artists represented have all sent work that seems to indicate they had something to say and knew how to express it.

It is probable that the architect visiting this exhibition will spend most of his time in the Gould annex where the National Sculpture Society has collected and placed on exhibition the best in modern sculpture ever shown in this country and one that will do much to foster the growth and appreciation of the sculptor's art in America. It is the persistent and unselfish effort of the Sculptors' Society that has accomplished this. With patience and great skill, they have year by year worked for their art. They at the outset suffered neglect and

for many years struggled against lack of appreciation. But to-day their reward is at hand, and the present exhibition is the fruition of two decades of untiring endeavor.

The setting of this exhibition of sculpture could not be improved. The grouping and general effect of color is an artistic result that commands admiration, and makes this a delightful place to study the various exhibits, and where one leaves with a satisfying sense of hours well spent.

This annex, which was generously placed at the disposal of the National Sculpture Society by Mr. Howard Gould, was erected as a training ring for his horses. It has not been used for several years.

The interior as well as the exterior, is of high architectural excellence, and could not better serve its present use if it had been erected for the purpose.

The tan-bark floor with its deep rich browns, the side walls of brick in lighter shades, the arched roof and skylight, and the bronze iron trimmings, present a beautiful background for the cedar trees and potted plants that form the all-sufficient decorations.

The exhibits have been grouped with best judgment by the committee in charge, and the captious critic will find no cause to give expression to his pessimism as to the future of the sculptor's art in America.



NATIONAL SCULPTURE SOCIETY'S EXHIBITION

GOULD READING CIRCLE, NEW YORK

With one or two exceptions every piece shown is a new work. There is no grouping of old and often-seen subjects. It is all good.

To the architect, opportunity is presented to study the possibilities of sculpture as an embellishment of his work. Not alone on the monumental public building, but to the simpler expressed work as well. There are many splendid examples of low relief that show the possibility of a new form of decorative treatment that would be a pleasant change from the conventional manner.

This exhibition will illustrate to the layman, and in a forcible way, that sculpture is not monumental only.

It emphasizes the fact that there may be introduced into the every-day life of the people, good decorative forms that are every way as desirable as the small picture, and lend a variety and decorative effect that cannot always be had by the four-square picture frame no matter how good a canvas in oil or a water color it may surround.

The splendid ensemble, and the fact that in order to find space to properly display the sculpture it was necessary to seek room outside the Vanderbilt Galleries in the Fine Arts Building, proves conclusively the vital need in New York of a building large enough to house all the societies of the arts and crafts. It is a reproach to New York that such a building has not taken tangible form.

That there is an awakening of an appreciation of good art in America is certain.

The reception at the opening of the memorial exhibi-

tion of the work of Augustus Saint Gaudens under the auspices of the American Institute of Architects and described elsewhere in this issue confirms this.

In Memoriam—William Martin Aiken

At a meeting held in the office of the Supervising Architect of the Treasury Department, December 11, 1908, the following memorial was adopted:

This office has learned with profound regret that Hon. William Martin Aiken, once its official head, departed this life on December 7, 1908, and in adopting this memorial we feel that it embodies a just and deserved tribute to his memory.

Born in South Carolina and reared under the best influences and traditions of his native state, Mr. Aiken brought to this office the highest ideals of personal and professional conduct. In his official relations he was the soul of honor with all men, and no inducement could swerve him from the path of duty and honesty. Courteous and polite to the officials and employees who served under him, he exacted nothing from them save the same high standards which governed his own life.

Mr. Aiken was sworn into office April 1, 1895, and resigned June 30, 1897. He came at a time when Federal architecture was the subject of much public criticism and his constant aim while Supervising Architect was to improve conditions as he found them, and to his credit, long to be remembered, we can testify

that a new and better era was dawning with reference to the design and construction of public buildings when he laid down his office. Nearly all of us who sign this tribute served under him and his splendid traits of character are known to us personally—his high sense of honor, strict probity, and unswerving devotion to the Government at all times and under all circumstances—all these things have abided with us since his connection with the Government ceased.

The architectural profession has lost in the death of Mr. Aiken a member thoroughly devoted to its best aims and purposes, and his vacant place among the best of its membership will long remain unfilled. We have lost a personal friend whose esteem was highly valued, and the surviving members of his immediate family a relative whose memory they should and will cherish as a gallant gentleman, without fear and without reproach.

In view of the foregoing, it is resolved by the Supervising Architect and his official family that this memorial be adopted as expressive of their views of Mr. Aiken and regret for his death, and that copies be given to the press for publication, and also be transmitted to his nearest surviving relatives.

JAMES KNOX TAYLOR, Supervising Architect.

CHARLES E. KEMPER, Assistant to Supervising Architect.

JAMES P. LOW, Chief of the Technical Division.

LOUIS A. SIMON, Superintendent of the Draughting and Construction Division.

J. C. PLANT, Superintendent of the Computing Division.

PAUL E. FLYNN, Chief of the Inspection Division.

JAS. A. WETMORE, Chief of the Law and Records Division.

JNO. W. PARSONS, Chief of the Accounts Division.

J. E. POWELL, Chief Mechanical and Electrical Engineer.

Raphael, the Greatest of Designers

It is, after all, his unique mastery of composition that is his chief title to fame, and his glory must always be in proportion to the estimation in which that quality is held. It was because composition was to him a comparatively unimportant part of painting that Velasquez thought little of Raphael. It is because, for them, composition, as a distinct element of art, has almost ceased to exist that so many modern painters and critics decry Raphael altogether. The decorators have always known that design is the essence of their art, and therefore they have always appreciated the greatest of designers. That is why Paul Baudry, in the third quarter of the nineteenth century, idolized Raphael and based his own art upon that of the great Umbrian. To-day, in our own country, mural decoration is again becoming a living art, and the desire for the appropriate decoration of important buildings with monumental works of painting is more widespread, perhaps, than it has been anywhere at any time since the Italian Renaissance. So surely as the interest in decorative painting and the knowledge of its true principles becomes more widely spread, so surely will the name of Raphael begin to shine again with something of its ancient splendor.

But design is something more than the essential quality of mural decoration—it is the common basis of

all the arts, the essential thing in art itself. Each of the arts has its qualities proper to it alone, and it may be right to estimate the painter, the sculptor, the architect or the musician according to his eminence in those qualities which are distinctive of his particular art and which separate it most sharply from the other arts.—*Scribner's Magazine*.

The Capitol at Washington and Its Environs

The doors of a new luxurious office building opened for ninety-two United States Senators on their return to Washington this month. The last stone has been set in the monumental structure. Apart from many costly furnishings and fixtures, the building costs the Government \$3,250,000.

The interior construction is well under way. The furniture has been contracted for at \$80,000. That means, in round numbers, something like \$800 for each of the suites of two rooms. Moreover, there is a big subway between this office building and the Capitol, through which the Senators can travel without exposure to inclement weather.

Architecturally the building is an ornament to that legislative corner of the Federal city. But it is much more than that, for the marble pile stands as next to the last to be completed before the magnificent square of public buildings on Capitol Hill will be a reality. It will easily be the most splendid group of imposing public buildings on this continent and, it may be, in the world.

The Capitol, which had cost \$13,500,000 up to 1896, and which has been renovated at an expense of \$700,000 more since then, occupies the western side of the square. It does not fill in the whole of the space, but looms forth in the midst of the Capitol grounds as the most notable of all the many public buildings in Washington. It is possible that some time the east front of the old portion of the Capitol building may be refaced with marble, so as to improve the architectural appearance and symmetry. Otherwise the Capitol, which has been a growth in construction for about a half century, is well-nigh completed.

On the south side of the square stands the new house office building of marble. It was opened to the representatives, with its 400 rooms, last December. Workmen are still putting finishing touches upon it, including outside "treatment." It is almost an exact counterpart, in its exterior, of the Senate office building, which is directly opposite, but on the north side and outside of the Capitol grounds.

It is a distance of four city blocks between the two. That is the width of the Capitol grounds. Skirting one-half of the eastern boundary of the grounds is the Library of Congress.

The last structure contemplated for the square is a Temple of Justice. It is to occupy a great square just opposite the northwestern half of the Capitol boundary, and it must be a counterpart of the Library of Congress. Speaker Cannon and Senator Hale, supported by friendly sentiment in both branches of Congress, are supposed to be contemplating an appropriation for that new building at the coming session, now that the Senate office building is completed.—*Exchange*.



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PRESIDENT

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178 Fifth Ave., New York

LLOYD WARREN
3 East 33d Street, New York
CHAIRMAN COMMITTEE OF EDUCATION

LIST OF AWARDS, JUDGMENT OF DEC. 10, 1908

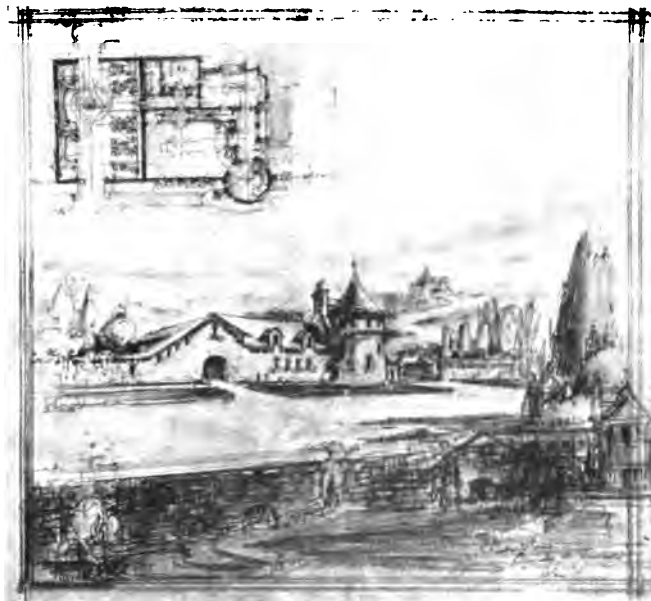
CLASS A, PLAN, A STATE SANATORIUM

Muscowitz, J.	New York	Atelier A. Ware	M.
Brendle, M. F. H.	"	Bosworth & Holden	M.
Schaefer, W. J.	"	Prevot	2nd M.
Soldwedel, F.	"	Hornbostel	M.
McKinney	"	"	2nd M.
Barry, F.	"	"	M.
Fallon, J. T.	"	"	M.
Holland, G.	"	"	M.
Talbut, J. F.	Baltimore	Baltimore	2nd M.
Rigaumont, Victor	Pittsburg	CarnegieTech	M.
Barstow, A.	Philadelphia	T-Square Club	M.
di Nardo, Antonio	"	"	M.
Dorsey, C. M., Jr.	"	Univ. of Penn.	M.



A STATE SANATORIUM
SECOND MEDAL

MR. MCKINNEY
ATELIER HORNPOSTEL



CLASS "A," ESQUISSE-ESQUISSE
A GARAGE AND GARDENER'S LODGE

CHARLES ROMER
ATELIER HORNPOSTEL

CLASS B. ORDER, A COVERED WAY.

Jorgensen, V. C.	Seattle	Atelier Arch'l Club	M.
Richardson, P. D.	"	"	M.
Moldenhour, H. A.	"	"	M.

CLASS A, ESQUISSE-ESQUISSE.

A GARAGE AND GARDENER'S LODGE

Wenzel, H.	New York	Atelier Hornbostel	M.
King, W. H., Jr.	Pittsburg	CarnegieTech	M.
Romer, Chas.	New York	Hornbostel	M.

CLASS B, ESQUISSE-ESQUISSE.

A SWIMMING CLUB

Idell, Geo. S.	Philadelphia	Atelier Univ. of Penna.	M.
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CLASS "A," ESQUISSE-ESQUISSE
A GARAGE AND GARDENER'S LODGE

H. WENZEL
ATELIER HORNPOSTEL

THE AMERICAN ARCHITECT AND BUILDING NEWS

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IN the importance of subjects considered, and the size and interest of the attendance, the Convention of the American Institute of Architects held in Washington last week will probably rank above any that have gone before. It would be difficult to say which of the various matters discussed are of the greatest importance viewed in a broad sense, but there can be little question but that the action of the Institute indorsing and recommending an increase of twenty per cent. in the schedule of charges for professional services will be of the widest interest, and will provoke the keenest discussion throughout the country. The reasons advanced for this increase seem potent, and that it was inevitable has been apparent for years, and yet there can be no denying the fact that conditions differ widely in a country of such vast area as ours, and hence the difficulty in devising a universally acceptable schedule, and the necessity of its containing to some extent the quality of flexibility.

THE attendance at the Tuberculosis Exhibition, now being held in quarters provided at the Museum of Natural History, in this city, has doubtless surpassed in point of numbers the expectations of those responsible for it. This fact would seem to testify to the general interest which has been aroused by the educational crusade being waged against this terrible disease, and is most encouraging. In the case of tuberculosis perhaps more

than in that of any other communicable disease it is imperative for the community at large to have a general understanding of the conditions under which it is communicated, and conversely the means of prevention, as well as the methods of treatment. Knowledge of these matters on the part of the public, and an appreciation of the responsibility of the individual are indispensable in any comprehensive effort to lessen its ravages. Especially is this true in the matter of prevention, for while physicians are ordinarily consulted and their advice followed, particularly in the case of those in the better walks of life after disease has made its presence known, the prevention is almost wholly in the hands of the masses. Moreover it is held to be infinitely better to prevent disease than even to relieve it, and although the treatment of tuberculosis is of undeniably great importance, in the broadest sense, the dissemination of knowledge that will tend to prevent contracting it is of still greater. It would seem, therefore, that perhaps this feature of the Exhibition, the one in which the architect is particularly concerned, had not received the full measure of consideration from its projectors to which it is entitled.

WE venture the opinion that very little criticism will result from such action if the Charter Revision Commission of New York follows its present expressed intention and recommends a brief, simple, clear and readily understandable document to replace the present City Charter, than which a more clumsy, redundant, obscure and involved instrument would be difficult to imagine. But this is only one of the improvements contemplated. Other commendable features are suggested, chief among which might perhaps be considered the proposed Department of Supplies, whose function is intended to be analogous to that of the purchasing department of a modern industrial plant. That something of this character is urgently required has apparently been amply demonstrated by recent testimony which would seem to incontrovertibly establish the fact that this city has ordinarily paid from twenty to fifty per cent. more than the retail price for supplies. Whether the establishment of a Department of Supplies will correct the evil, is of course problematical, but the plan has much to commend it, as has also the suggestion to abandon the publication of the City Record. This publication now in its thirty-sixth volume constitutes a very large item of expense and can hardly be considered of more than moderate value. The plan to consolidate the two License Bureaus now maintained by the city will doubtless receive general approval, and in all probability some desire will be felt to know whether the subject of consolidating the Bureau of Buildings with the Tenement House Department was considered. Undoubtedly there are among the architects of Greater New York many who favor such a consolidation, believing it would result in large economy to the city, greater efficiency of administration, and consequent diminution of annoyances and delays now incident to work under the jurisdiction of the overcrowded Tenement House Department. The proposition seems worthy of the most careful consideration, and if rejected the grounds upon which it is found undesirable or inexpedient would doubtless prove of much interest, and should be stated in full.

THE AMERICAN ARCHITECT AND BUILDING NEWS

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WEDNESDAY, DECEMBER 30, 1908.

No. 1723.



FAIENCE PANEL IN WAITING ROOM

SCRANTON STATION, D., L. & W. R. R.

Station at Scranton, Pa. for the Delaware, Lackawanna and Western Railway

KENNETH MURCHISON, ARCHITECT

THE station at Scranton, Pa., for the Delaware, Lackawanna & Western Railway, recently completed, was built from plans prepared by Mr. Kenneth Murchison, architect. This station building is 250 feet long by 80 feet wide. It is five stories high, built of fireproof brick and steel construction, with concrete floors and partitions. The exterior is Indiana limestone, with six engaged columns for the central feature.

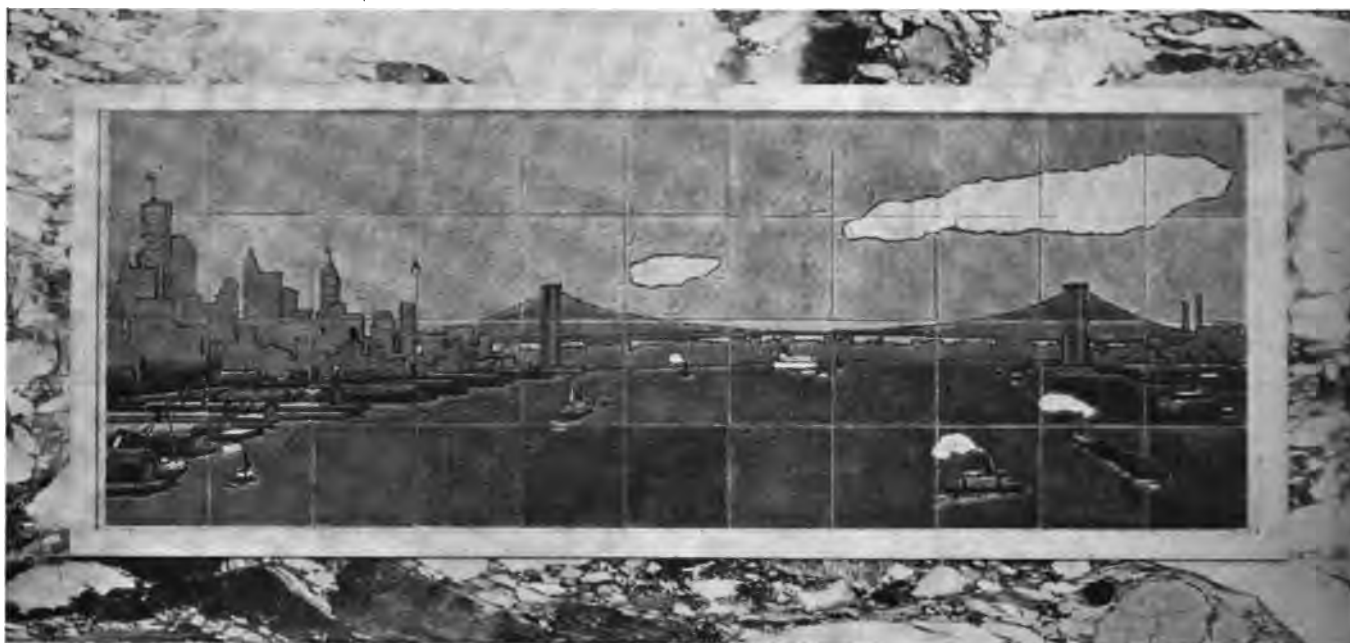
While this station is designed to serve the East and West traffic of the main line, it is as well the terminus of the Bloomsburg division. As will be seen, the style of architecture is French Renaissance, and the general design admirably suggests the purpose for which this building was erected.

The three approaching streets, Spruce Street, Lacka-

wanna Avenue and Jefferson Street, form a junction and triangular plaza at the front of the station. This plaza is block paved, and is defined by an ornamental classic balustrade.

As shown by the accompanying illustrations the building is surrounded on three sides by a continuous marquise, designed to afford shelter over the entrances and sidewalks. This marquise is 20 feet wide. The location of the various offices and conveniences can be seen on reference to the floor plans.

The interior finish of the building is well carried out. The harmonizing tones of the Formosa marble, particularly in the main waiting room, present a fine effect of color. An original and splendidly executed feature of the decorative treatment is the thirty-six faience panels, in colors, after the paintings by Mr.



FAIENCE PANEL IN WAITING ROOM

SCRANTON STATION, D. L. & W. R. R.

Clark G. Voorhees. These panels were reproduced in color, direct from nature, and depict actual scenes along the line of the Lackawanna road. Their color is beautifully brought out by the framing of white Italian statuary marble. This introduction of faience into the embellishment of railway station interiors is a new departure, and its successful and artistic effect will no doubt lead to further examples of this decorative treatment. A number of these panels are illustrated in this issue.

The base of the main waiting room is to a height of about twelve inches of Alpha green, Swiss marble. The twenty-eight pilasters are of light sienna Italian marble and the panels of Brèche Violette.

This marble paneling presents a surface of most suggestive markings, and the passenger with artistic feeling, who awaits the time for his train, will be interested in studying the tracery of this beautiful stone and the effects of form and landscape it suggests.

It is a good omen for decorative treatment in America, when the builders of structures of this character are willing to permit the architect to indulge his artistic sense.

The effect produced in this station is one of utmost satisfaction, and finds approval in the artistic mind, and has an educational value that is worthy of mention. Surmounting the cornice at the second floor level is an ornamental bronze railing.

The outside light reaches the waiting room through a barrel vaulted ceiling of leaded glass.

The electric lights are concealed and so arranged as to produce a diffusion that retains all the color values of the marble and the faience panels.

The ventilation of the main waiting room is effected by openings framed in the copper ribs of the barrel vault. The remainder of the station is ventilated by a mechanical forced draught system, which insures an abundance of fresh air at all times.

REPORT OF COMMITTEE ON BUREAU OF FINE ARTS, AMERICAN INSTITUTE OF ARCHITECTS

GENTLEMEN: The Committee on the Bureau of Fine Arts have the honor to report as follows:

This subject is presented to the convention, not only as an abstract æsthetic question, but as a grave, practical problem, affecting great interests of the public generally and the economic administration of the National Government. The committee, after mature consideration, recommends that immediate action be taken toward the establishment of a Bureau of the Fine Arts, as a part of the governmental machinery, believing that it is necessary to the public welfare.

This definite and positive recommendation is the result of an investigation and examination of the records of the different departments, through which the following facts have been ascertained.

Since the foundation of the Government, more than \$500,000,000 of public money has been expended for buildings and other works of art, which should have been under the control of a Bureau of Art. A detailed list of expenditures by the different departments is annexed to this report.

In addition to this amount, large sums have been spent for parks, bridges, aqueducts, harbor improvements, designs for coins, stamps, bonds and bills, the value of which would have been greatly increased had they received intelligent artistic consideration.

About 90 per cent. of this total amount has been spent during the last twenty years. In the immediate future there will be spent the sum of \$45,000,000, for which appropriations have been made.

Under existing conditions, there are many kinds of machinery for controlling these expenditures. Usually each act of Congress appropriating money for artistic work specifies the method of procedure, and designates the person or persons in whom the authority is vested. As a result, it is sometimes the President, a member of the Cabinet, a committee of the Senate or House, or a department or bureau; sometimes an army engineer, the superintendent of the Capitol, a committee of the Grand Army of the Republic, a special or private commission or a private individual, who controls and regulates the choice of the artist and the expenditure of the public money, and who acts not infrequently as artistic arbiter. In each case the arbiter regards the enterprise from his own point of view, without respect to its relation to the whole æsthetic question.

and the result is, generally, waste of public money and always artistic chaos.

You committee submits that the expenditure of this vast sum of money, without the supervision of a well-organized and competent authority, is unbusinesslike, improvident and not economic government. The fact that the present appropriations show that the ratio of expenditures for these purposes is increasing annually, seems to your committee to indicate that the necessity for action is urgent.

During the past, as many as fifteen bills have been introduced in Congress to remedy these evils. A synopsis of these bills has been compiled for the Public Art League of the United States.

The general character of the bills is best described in the report, as follows:

"After an examination of all the bills, which have been presented to Congress in connection with this subject, the committee feel that their effectiveness, if they had become laws, would have been marred for the following reasons.

"Such bills were introduced with the idea of ameliorating evils which existed in single departments or in single cases, one covering paintings and statuary for a single building; one the question simply of paintings; several bearing upon the buildings of the supervising architect's office.

"The fundamental error in all attempts at legislation has been in confining the law to one branch of art, or to isolated buildings. As buildings and their decorations of painting and sculpture, and the landscape, including monuments and fountains, are so intimately associated with each other and the effect of any one so easily enhanced or marred by the other, they should all be under the direction of one guiding body. The only way to obtain a harmonious whole is to have them all in the hands of one department. The lack of harmony between different buildings in Washington, the total lack of unity in the selection of their sites, and the still more notable deficiencies in the character, location, and fitness of statues and monuments, are all due to the separate committees, individuals and departments which have had charge of such matters for the Government."

The first step toward a solution must be to recognize that the artistic problem is a single one. That the object sought is the product of a great totality. That the selection of sites, the general distribution as well as the design and execution of architectural work, monuments, landscape work, sculpture, painting, mural decorations, bridges, parks, and their accompaniments, are all parts of a coherent whole, and must be subject to one single authority, invested with such dignity as to command respect for its decrees, and that this authority must be guided by the most enlightened advice which the artistic professions can furnish.

Your committee therefore recommends as a remedy for the existing evils, the establishment of a permanent Bureau of Fine Arts, the essential element of which shall be a Superior Council composed of a number of men of known and recognized eminence in the profession of the arts.

Your committee is guided in this action by the example of the older nations, notably France, whose logical treatment of this important question has placed her people at the head of the civilized world in all matters pertaining to the arts.

In order that the Institute may have at hand precise information as to what has been done in this matter in foreign countries, your committee has obtained, from official sources, a synopsis of the organization of the French, German and Italian Ministries of Fine Arts, which is presented, with a brief history of the movement toward their establishment.

In further support of its recommendation, your committee quotes the following resolution, which was passed after a thorough discussion at the International Congress of Architects at Vienna in July of this year, 1908, the subject of governmental direction of Art having been designated as one of the four subjects for consideration by the Congress:

"*Resolved*, That every Government be urgently requested to establish a Ministry of Fine Arts or at least a section which shall deal with subjects relating to the arts. To such a ministry or section shall be attached artists of established reputation. Since architecture can be considered the leading art, architects shall be in a majority. The work of this ministry or of this section shall be the advancement and encouragement of the fine arts in all their branches."

This resolution has been endorsed by the principal artistic bodies of eighteen nations in Europe.

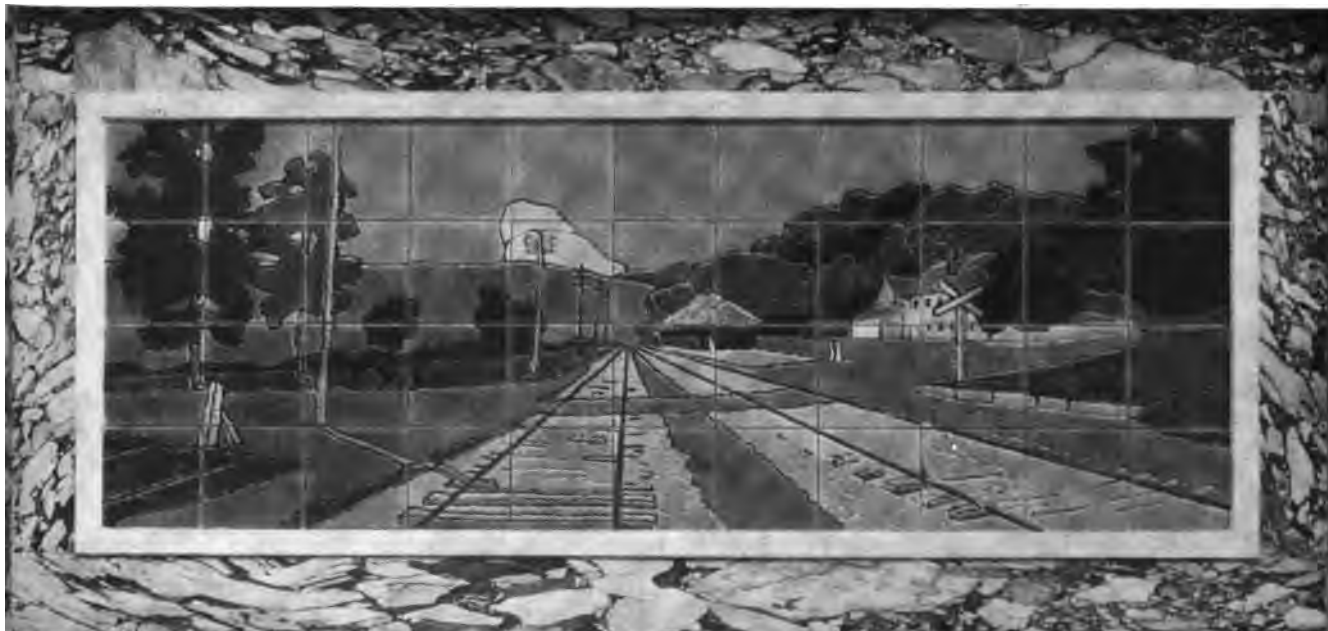
A full report of the congress will be rendered to the Institute by a delegate, who represented the American Institute of Architects.

Your committee has judged best to place before you the economic and business aspect of this question first because from its point of view the necessity for immediate action is urgent. Viewed from the economic standpoint alone, the pecuniary benefit of a well-organized and regular system for the expenditure of great sums of public money must be sufficiently obvious.

It is obvious that existing value is never destroyed, but that, on the contrary, commercial values are always enhanced and new values created by artistic treatment.

To the great mass of cultivated and intelligent citizens of our country who recognize the irresistible force of abstract ideals, and who appreciate the lessons of history, there is a vastly more cogent reason for altering existing conditions.

It is, that the expenditure of this vast sum of money signifies



PAIENCE PANEL IN WAITING ROOM

SCRANTON STATION, D. L. & W. R. R.

that we are establishing, at a rate never before exceeded, lasting monuments to our civilization, and that, without proper management, these monuments will not represent and typify the state of cultivation which our people have achieved. The works of art of a nation are the records by which it is judged by posterity.

A nation's literature, its coins, its buildings, statues, paintings, bridges, roads and tombs are the undying testimonials of the character and intellect of its people, and the permanent record of their achievements.

The common desire of every race in every period of their history to preserve and guard artistic treasures evidences the instinct for beauty and the aspiration for immortality. The permanency of works of art is a sufficient reason for extraordinary care in their design and execution. When such works are undertaken by a government, a high standard of excellence becomes a civic obligation.

It is the duty of the state, itself a product of the cultural needs of humanity, to recognize and foster the culture of the arts, as the most powerful agency for uplifting and elevating the ethical standard of the people.

It is our duty to ourselves, to our forefathers, and to posterity to see that the monuments which we are now erecting, these records which our Government is now making, should be worthy representations of the true state of our social conditions and an evidence of the taste and cultivation of our time.

To those who recognize these facts should be entrusted the guidance of legislation concerning our monuments. It is their duty to demand that the expenditure of these enormous sums of public money should be made with all the wisdom, foresight and intelligence of which we, as a community, are capable.

As to the form of a bill to present to Congress, your committee deems it advisable to await the result of the discussion of this report, but submits the following suggestions:

(a) That the bill shall provide for the organization of a bureau which shall have control.

(b) That there shall be a Superior Council, composed of eminent architects, sculptors, painters and other artists and laymen distinguished for their interest in and knowledge of the Fine Arts.

(c) That the members of the council shall be appointed by the President by and with the advice of the Senate.

(d) That the recommendations of the council shall be binding upon the chief of the bureau.

(e) That the chief of the bureau shall be the representative of the government in all transactions involving the employment of architects, painters, sculptors and other artists for public works, and shall decide with the concurrence of the Superior Council upon the methods of choosing and the choice of artists or public works of art.

(f) That all public works (of a character to be described) shall be supervised by the Bureau of Fine Arts, and that the decision of the Superior Council in all such matters shall be final and binding upon all departments.

It is recommended by your committee that the following subjects should be included in the authority of the Bureau of Fine Arts:

1. Architecture, Painting, Sculpture, Park Work, and Engraving.

2. Educational matters pertaining to the Fine Arts and the dissemination of useful knowledge among schools, colleges and universities pertaining thereto.

3. Administration of the National Gallery of the Fine Arts.

4. A system of national museums in different cities, and that a system of circulating works of art throughout the country be established.

In conclusion, your committee repeats from its report of 'last year:

"The intention of establishing a Bureau of the Fine Arts is, not to develop a national style of architecture or definite styles of painting or sculpture, but to invest the whole subject of the fine arts with appropriate dignity, to encourage the establishment of proper schools, to stimulate the universities in this much neglected branch, and to educate the people.

"In other words, the purpose of a Bureau of the Fine Arts would be to propagate the truth that art is not an effeminate luxury, but that it is the manifestation of that great vital

force, the imagination, which is the original impulse behind all human progress; and to, furthermore, teach the people of the United States that if there is one thing above all others which is absolutely and universally democratic, typically and thoroughly American, and essentially in accordance with the whole spirit of the constitution, it is the inalienable right of all the people by inheritance to possess and preserve the works of genius of the human race, and to participate equally in the inestimable advantages and benefits of the study of the Fine Arts."

REPORT OF THE BOARD OF DIRECTORS, AMERICAN INSTITUTE OF ARCHITECTS

MEMBERSHIP.

The board reports that the institute has now 868 members to wit: 320 fellows, 548 associates, as well as 63 honorary members and 83 corresponding members.

Since the last report of the board seven fellows have been elected, three have resigned and eleven have died. Among these is Alfred Stone, one of the oldest fellows of the institute, for seven years its secretary, and, at the time of his death, a director actively engaged in Institute work. Fifty-seven associates have been elected, one has been dropped and two have died.

Three honorary members and two corresponding members were elected at the convention of last year.

For cause, duly reported by the Committee on Practice, and passed upon by the Judiciary Committee, one member has been suspended and one member expelled.

The board recommends for advancement to fellowship the following associates:

Messrs. Boyd, Hunt, Livingston, Parker, Perkins and Tilton.

CHAPTERS.

The chapters have taken an active interest in increasing the Institute membership. By this means several chapters have materially increased their delegations in the convention and their effectiveness in the Institute. A large majority of the chapters have taken part in local movements and have assisted the Institute materially in all national movements. Steps have been taken to establish chapters in New Orleans, La., and in York, Penna.

FINANCES.

The finances of the Institute during the past show improvement due to increase in membership, to the extinguishment of interest payments caused by liquidation of the debt on the Octagon, to a more strict economy in management and to the generous help of subscribers to the sustaining fund, but they are still far from satisfactory.

During the year the board has caused to be made a thorough study of the business methods, income and expenditures, and has employed an expert to assist therein, resulting in the appointment of a standardizing committee which has the whole subject under consideration.

LEGACIES.

Several years ago the board drew attention to the fact that the European architectural societies are frequently enriched by legacies from members and others interested in architecture. The board is pleased to state that several inquiries have been made to the Institute in reference to inserting in wills, bequests for the benefit of the Institute. The board urges members of the Institute to bring to the attention of those interested, the consideration of such bequests.

THE GOLD MEDAL OF THE A. I. A.

The board recommends that the Gold Medal of the Institute be awarded biennially, alternately to a foreigner and to an American; that the recipient be nominated by the board; that, subject to the ratification of the convention and his attendance in person, it be conferred at the following convention.

This year the board of directors recommends that the Gold Medal of the A. I. A., the first to be conferred upon an

American, be awarded to one whom it thinks preeminently worthy to be honored, one who has set a standard for high achievement in architecture, who has generously and wisely advanced the cause of architectural education, and who, as shown in the Washington plan, has grasped and expressed the need of civic beauty, Charles Follen McKim.

COMMITTEE TO CONSIDER RELATIONS TO OTHER SOCIETIES.

The Committee on the Relations to Junior Societies has held many meetings and conferences with the Architectural League of America, and with the Society of Beaux-Arts Architects, and has laid out a plan which it recommends for bringing these societies into closer affiliation with the A. I. A. These conferences culminated in a meeting of the president of the architectural clubs constituting the League and of the Society of the Beaux-Arts Architects, held at the Octagon, at which the question was discussed at length. The result of this will be given in the committee report. The board considers this a matter of extreme importance and recommends it to the consideration of the convention.

BUREAU OF THE FINE ARTS.

In spite of a general interest in the subject of the fine arts and an increasing appreciation of the executive departments and many legislative branches of the government, the board of directors feels that the fine arts are at present badly administered in our country, having neither the advantage of intelligent selection, harmonious relation, nor economic execution; that we, as a nation, have been groping more or less in the dark in efforts to better these conditions. The Committee on the Bureau of the Fine Arts will, in their report, supply data, and will discuss this subject. The time is now ripe for a movement, and the board advocates strongly a bill for the establishment of a Bureau of the Fine Arts, as outlined in the committee's report.

WASHINGTON CITY.

One of the most important elements in the Park Commission scheme for the development of Washington was the location of the Lincoln memorial on a site overlooking the river and on the principal axis of the Capitol and the monument. It would seem as if everyone would instantly appreciate the value and importance and fitness of the site, but unfortunately this is not the case. Two bills for other memorial schemes were introduced at the last session of Congress. One was to make, as this memorial to Lincoln, a roadway from Washington to Gettysburg. The other calls for the location of the Lincoln memorial on Capitol Hill in connection with the Union Station.

The Institute, at whose suggestion the Park Commission was appointed, and which has approved without qualification the Park Commission's plan, should emphatically lend its influence to the end that this most important feature of the plan does not miscarry, and that no scheme which runs counter to this plan should have its approval.

The remains of Peter Charles L'Enfant, which were interred on the Diggs Farm in Maryland, are to be removed to Arlington. It has been suggested by the Columbia Historical Society and other patriotic associations that this would be a fitting occasion to have a memorial meeting, with appropriate ceremonies in honor of L'Enfant. It has been suggested that the Institute appoint a committee to join with other societies properly to honor the man who devised the greatest plan for the city of Washington, and who was the first to suggest a systematic, orderly and beautiful grouping of its buildings.

Note:—An address by Senator Newlands of Nevada, delivered on the opening day of the Convention and suggesting in outline the method of procedure by the Institute in its efforts to secure the establishment of a Bureau of the Fine Arts, was received by the delegates with many marks of approval. This interesting address will be printed in our issue of January 6, 1909, together with an account of the second and third days' proceedings of the Convention.

REPORT OF THE COMMITTEE ON COMPETITIONS, AMERICAN INSTITUTE OF ARCHITECTS

Last year's report and the resolution accompanying it appear not to have been clearly understood by the majority of the members. This is due to a variety of causes. It was issued first in the October number of the *Quarterly*, which ante-dates the convention and probably many of the men missed seeing it at this time. This was the earliest date at which it was called to the attention of the members of the Institute who were not present at the convention. Then it was printed in circular form. This was unfortunate because it was printed with the heading "a code for the conduct of competitions," and although the fact that it was not a code was clearly stated in the text, it was certainly misleading. It was not, however, generally distributed in this form, but only upon request. When it was finally presented to the members of the institute it was in the printed report of the convention, and there was no notice which would have called the special attention of members to a matter so important as this, which actually involved discipline, and which was a resolution binding upon the conduct of the members of the Institute.

The result of all this was that many of the members did not know that there was any such resolution and many of those who knew did not understand what it meant, nor what its object was. The Judiciary Committee, for example, were asked to pass on a case of violation of "the eighth clause in the code recently adopted for competitions." As no code was adopted and there was no eighth clause in the committee's report, it was not clear to what this referred. After some trouble it was discovered that the resolution following the seven principles of competition was the so-called eighth clause in the code.

Your committee would call the attention of the convention to the fact that the resolution is an extremely simple one and purposely put in that form so as to make it one that could easily be complied with. It is quite true that it is easily nullified by a purely perfunctory performance on the part of any member of the Institute in good standing; it is therefore a resolution that depends for its effectiveness upon the good faith and intelligent support of the members of the Institute. That it should be made more productive of good it is suggested by your committee that the secretary should keep simple forms of approval of competitions, and that whenever any member of the Institute is asked to give his approval he should fill out his approval on this form and file the approval with copy of the programme he has approved with the secretary, who would then have a record of every programme thus approved.

It is the opinion of your committee that no further action should be taken by the central body than what has already been taken; that conditions which should govern competitions will necessarily vary in different localities and should be made the subject of local legislation; but the resolution suggested at the last convention seemed to your committee one that might be applicable to the whole country and would be as useful a first step in New York as it would be in Los Angeles.

At the request of the last convention your committee have compiled a pamphlet containing most of the important suggestions made during the last four or five years by the various committees on competitions; this is printed and is available for all members of the Institute. It is, of course, understood that there is nothing binding in the pamphlet and that it is issued only for the guidance of members.

Your committee recommend that a circular be issued containing nothing except the resolution passed last year, and that its scope be explained and attention drawn to the fact that the pamphlet above referred to has been printed, and that forms for the approval of competition programmes are available at the secretary's office.

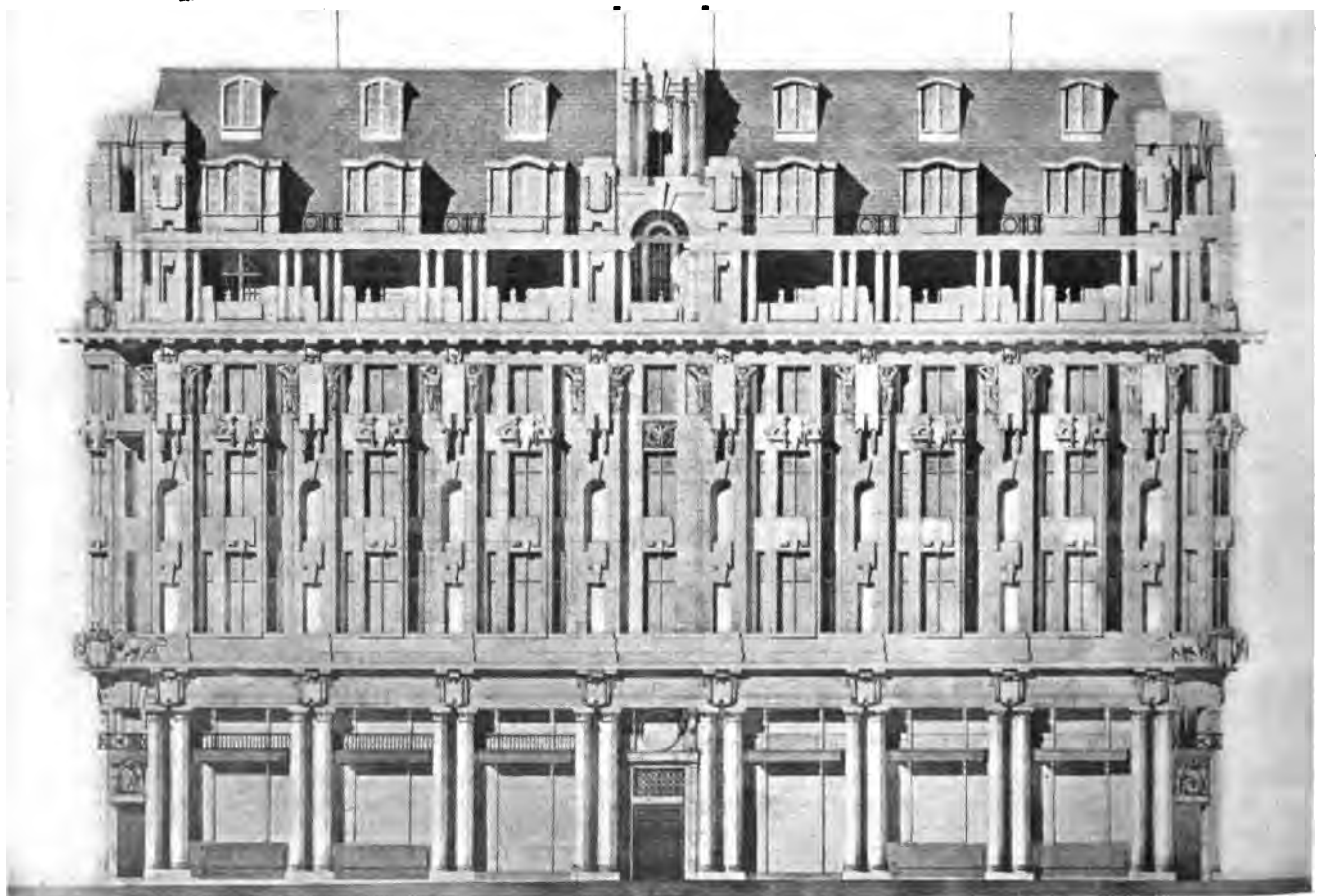
Your committee recommended the following resolution:

Resolved, That the A. I. A. does not approve of the adoption of a code for the conduct of competitions that shall be binding upon its members, but that members should consider themselves bound by the resolution passed at the convention of 1907 and should use their efforts, whether as competitors or judges, to see that the seven underlying principles mentioned in the report of your committee are complied with.

NOTES FROM EUROPE—A REVIEW OF CURRENT WORK IN ENGLAND AND ON THE CONTINENT, BY FRANCIS S. SWALES, ARCHITECT

The Improvement of South London—It is said that the Prince of Wales is about to change the map of South London; at least, according to the papers, the more dilapidated property belonging to the Prince's Duchy of Cornwall is to be swept away and replaced by new buildings with every modern improvement. It is extremely desirable that such should be the case. Few places in London need improvement so much; but, aside from the temporary improvement of more sanitary surroundings to the tenants of the "flats" (which are to replace the old houses) it is doubtful whether the change will be of much value to London so far as appearances are concerned. Nobody knows how to design a block of flats or a cheap hotel as bad as the ordinary run of English architects who do this class of work, and until we know in whose hands the work has been placed we must reserve all enthusiasm for the project. By far the most important part of the undertaking is the proposition to deal with the property along the river bank between Waterloo and Blackfriars Bridges. It is stated that when King Edward was Prince of Wales he expressed a desire that all this neighborhood, containing some 3,000 houses, should be cleared and converted into a good residential district. This would certainly assist in reducing the number of London's

unemployed houses and in getting rid of some of the most objectionable of those mentioned in an earlier letter. The district is one of the most depressing slums in the county, and it is remarkable that it should have been allowed to exist so long, especially when one considers the great increment in value which might be obtained by simply pulling down the present buildings, constructing a few new roads and offering the property for building sites. This, however, does not appear to be the scheme proposed, but rather to tear down a few houses at a time and build cheap flats in their places, and, among other things, a gigantic second-rate hotel. It is stated that this latter would not be undertaken by the Duchy, but is to be built by a company with a capital of \$4,000,000. The hotel would be the finest in South London and rival some of the great establishments on the north bank in its appointments. Such a hotel would be just the sort to go into the hands of a receiver almost as soon as built. London is already over-stocked with the "first class" of second-rate hotels. There are the great hulks of the Gaiety and the Piccadilly, which were unable to continue through a season, and there are any number of others which seem to be vast wildernesses except for a few weeks during the "American season." London has but one large first-class modern hotel—that is the new Ritz. There are three others, the Carlton, Berkeley and Claridge's, which are excellent as far as they go, and there are a number of little ones, such as Brown's in Dover Street, which can be complained of only on grounds of a degeneracy of taste in decorations and



AN OFFICE BUILDING IN PICCADILLY, LONDON

JOHN BELCHER, A.R.A. ARCHITECT



PICCADILLY HOTEL LONDON
QUADRANT FRONT

R. NORMAN SHAW
ARCHITECT

This design will be ultimately extended over the whole of the Quadrant

their somewhat cramped positions. Of the big, blatant, showy kind, suited to the man with money and without everything else, there are surely enough and to spare—none is needed in South London while the Strand exists, nor would the visitors to such hotels stay there if it were built.

The King's suggestion to change the character of the whole neighborhood by building a good class of residences does not seem impracticable, but buildings for offices and commercial purposes seem to be really needed.

Piccadilly and Oxford Street—A great many new offices are being provided in Piccadilly, among which the new building between St. James's and Arlington Streets, by Mr. John Belcher, being executed in marble, will be most conspicuous. A somewhat similar, though smaller and less successful, design has been completed in Oxford Street as a warehouse for a firm of silversmiths, the interiors of which are, however, of an exceptionally interesting character.

Work upon the new London County Hall scheme, which is to be built on the south side of the Thames on a site adjoining Westminster Bridge is about to commence, a contract having been let for the construction of the embankment wall and incidental work. It is now estimated that the cost will be something more than £1,000,000 instead of £750,000 (which was The Architect's guess in the competition), but the design has been improved, and probably other things than the actual buildings are included in the revised estimates.

The Stage of Drury Lane Theatre has been reconstructed at a cost of about £100,000 and is now one of the finest in Europe. It is a cube in form, 100 feet square and

100 feet high. Some 20,000 8-c.p. electric lamps are used for its lighting. There are 250 linear feet of steel fly-galleries and 200 feet of paint-frame and lime light galleries.

France: Versailles—M. Bassompierre-Sewrin has won the Versailles competition for a savings bank building at Versailles. There is nothing specially remarkable about the design, but there is about the jury which judged the competition, for, besides the Mayor, President of the Council of the town and other public officers, it included the following architects: Marcel-Lambert, Blondel, Blavette, Eustache, Louvet, Le Grand, Petit and Vernholes. The prize amounted to \$400. Enough probably to buy drinks for the jury.

Ecole des Beaux-Arts, Paris—The following architectural students have been admitted to take part in the Concours Chénard:

Abella, Atelier Bernier; Arnal, Bernier; Crevel, Paulin; Durand, Deglane; J. Lambert, Marcel-Lambert.

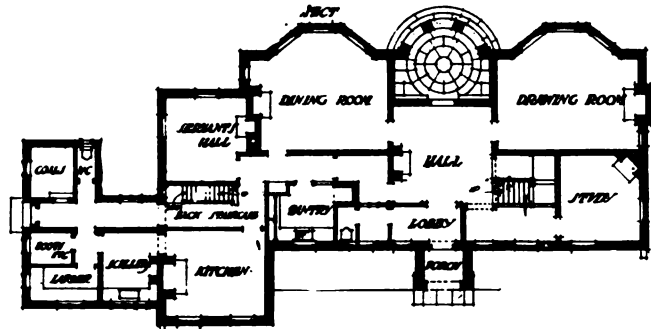
Academie des Beaux-Arts—The prizes of the "Foundation Roux" have been awarded for the first time. The competition being open to French artists who have achieved a third medal at the Grand Salon, or Associates of the National, former *logistes* or first medals at the Ecole des Beaux-Arts, and must be under 32 years of age. The prizes in architecture have been awarded to:

First (2,700 fcs.)—Tournon, élève de Bernier.



STORES AND OFFICES
HATTON GARDEN, LONDON

NIVEN & WIGGLESWORTH
ARCHITECTS

HOUSE AT WINCHESTER
ENGLANDERNEST NEWTON
ARCHITECT

Second (1,300 fcs.)—Woillez, élève de Marcel-Lam-bert.

Third (1,000 fcs.)—Molinié, élève de Deglane.

In the competition at the Ecole for a manufactory de mosaïques et de vitraux d'art the following Americans were awarded medals, viz.:

First—Everett Meeks, pupil of Deglane.

Second—Stevens, Murphy and Kellogg.

For the "Esquisse-esquisse" a first second medal was awarded to Peck.

Geneva—The international competition for the Monument à la Reformation has been adjudged as follows:

First prize to Monod & Laverrière and Talliens & Dubois, architects, Lausanne, and Raymond, sculptor, Paris.

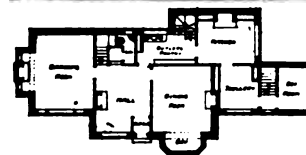
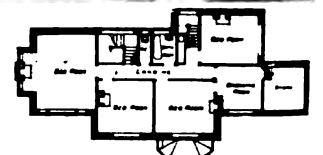
Second prize to H. P. Nenot, architect, Paris, and P. Lądowski and H. Boucher, sculptors, Paris.

A number of third prizes were awarded to French, Swiss and Italian competitors. Both the winning and second prize designs consist of a wall upon the face of which are the several statues, desired by the committee, carved in high relief and accompanied by inscriptions. The first prize design is not very inspiring, nor is it impressive—not at all what one might hope from a great international competition.

The Press: The Architectural Review (London) for October—The leading Editorial is an article upon the famous bust in the Louvre known as "La Dame d'Elché," a copy of which, by the Spanish sculptor, Ignacio Pinazo, is shortly to be placed in the British Museum, accompanied by a fine illustration of this notable piece of sculpture, while other interesting articles deal with "The Plight of Winchester Cathedral," which seems to be in a very bad way, and Buckingham Palace, which is very bad "architecture." As to Winchester, it appears, among other imperfections, that the buttresses built by William, of Wykeham, were built without foot-

ings or any special foundation, and instead of supporting the walls the buttresses have begun to settle and drag the walls with them. The editor makes caustic allusions to builders "who built better than they knew." Among the general matter may be mentioned an article on Bolton Abbey, Yorkshire—a very interesting example of early English Gothic; the regular monthly installment of the "Practical Exemplar of Architecture," which deals with the Choir House in the Close, Salisbury, a pleasant little building attributed to Wren; the continuation of an article on the work of Sir Gilbert Scott, which we should think is already more familiar to the profession and the public at large than could be desired by any lover of the beautiful. There are some illustrations of his design for the Law Courts, which is perhaps better than the Pennsylvania Railroad Station in Philadelphia—but "that's another story." The usual "Notes from Paris," and the new departure, "Notes from Italy," are illustrated with examples of current work, and the first installment of an article with illustrations, entitled "Round and About Paris," complete the contents.

The Review continues its good work in the November number, just issued, which is one of the best issues for a long time—the illustrations being more than usually interesting and well reproduced. Among the latter are the new Town Hall at Cardiff by Messrs. Lanchester & Rickards and Mr. Belcher's scheme for reconstructing the old Crosby Hall at Leighton House—a scheme to be commended since the old hall has been demolished and the materials numbered and stacked away. Mr. Belcher proposed some additions to the original structure in the shape of new wings in red brick, to house stairways to the galleries, which add a certain picturesqueness to the older part which is rather confined and stilted. The continued articles, "Round and About Paris," is illustrated with some old views of the Palais de Justice and Notre Dame, which other buildings erected within recent years have partly obscured. "The Practical Exemplar of Architecture" (photos and measured drawings of old work) illustrates the old Dutch arch and gable at Canterbury, known as

HOUSE AT RISHWORTH
YORKSHIREWALSH & NICHOLAS
ARCHITECTS



A SILVERSMITH'S SHOP
LONDON

JOHN BELCHER, A.R.A.
ARCHITECT

the Roper Gateway—a good piece of brickwork. Queen Anne's Walk Barnstaple, which is interesting rather than good. "Some recent Public Libraries" is a series of notes accompanied by a number of good illustrations, including plans and views of the exteriors and interiors of the library buildings at Hammersmith by H. T. Hare; Bristol by H. Persy Adams; West Islington by Beresford Pite; Aberdeen by Brown & West, and Greenwich by Wills and Anderson. Also an article dealing with the new business premises in Oxford street by Mr. Belcher.

"*L'Architecture*" for October 24 contains illustrations of the Chateau de Frambrègues by Mons. Viée and the announcement of the death of Mons. François-Alphonse Legros, known principally on account of the fine Hospital Boucicault won by him some years ago in a notable competition. The plan is said to be the most satisfactory and practical arrangement produced in France, while its artistic qualities were sufficient to obtain a first medal at the Salon and a Medaille d'Or at the exposition of 1900. He was a member of the Legion d'Honneur and an Officer of Public Instruction.

The same journal for October 31 contains an apartment house designed by M. Viée which was this year awarded one of the "Medailles d'Architecture Privée."

The "*Builder*." This journal is instituting a competition for the treatment of a façade constructed in ferro-concrete, the problem being at once artistic and scientific as the competitors are required to propose or show the particular "system" adopted—what they consider a sufficient or necessary thickness of walls, etc., mosaic, tiles, "pediments" and so forth may be employed in the scheme of decorative treatment. The latest

number, November 14, contains a view of a fine store and office building in Hatton Gardens, E. C., designed by Messrs. Niven and Wigglesworth. It is so very seldom that such refined and dignified work appears as representative of modern English practice that this design is entitled to our earnest approbation.

"*The Building News*" publishes in its last three issues but one thing of beauty; but it will surely be a joy to its owner as long as it, he or she—as the case may be—lasts: The house near Winchester by Mr. Ernest Newton. The issue for November 13 contains the amazing plans by Mr. Fulton for the L. C. C. Hall with no fewer than twenty-one small internal light areas—and three larger ones; all very wonderfully drawn in the latest "competition style" of superior British methods of indication. Something quite different and possessing much of the charm of the old work is the Gothic Screen, Organ Case, and Furniture, St. Peter's Church, Arlesey, Bedfordshire, of which Mr. Geoffry Lucas is architect.

La Construction Moderne has a number of good things, among them a house in Venice by M. Torrès in Neo-Byzantine style, shown in the text of the issue for October 17, the plates of which are devoted to the atrocious station built by the Northern Railway at Valenciennes, and the very beautiful little monument Homage to Watteau, which appears without the name of the sculptor. The October 24 number contains plans and photos of a most chaste and convincing Hotel Particulier by Chatenaye & Rouyere, while the following week there appears an illustration of the first prize design for the Monument de la Reformation at Geneva and several buildings at the Exposition d'Electricité de Marseilles, of which the best is the Palais des Beaux-Arts, a charming work of which Monsieur P. Mouren is the architect.



SHOW ROOM

SILVERSMITH'S SHOP

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THE report of the Committee on the Bureau of Fine Arts, presented to the recent Convention of the A. I. A., constitutes the clearest, most logical and comprehensive statement of conditions imaginable. In vigorous language the Committee recommends definitely and positively that immediate action be taken toward the establishment of a Bureau of the Fine Arts as a part of the governmental machinery, believing that it is necessary to the public welfare. The recommendation is the result of much study and investigation of the conditions which have prevailed in the various departments as shown by the documentary records in the departments, supplemented by the record of achievements in the form of completed works, which tell their own story. As the Committee reports that the parks, bridges, aqueducts, designs for coins, stamps, etc., for which large sums of money have been expended, would have been greatly increased in value had they received intelligent artistic consideration, it is clear the story is not always a pleasant or artistic one. The present method by which money appropriated for artistic work is expended under the direction of the President, a member of the Cabinet, a Committee of the Senate or House, an Army Engineer or some other designated person, or body, who not infrequently acts as artistic arbiter, is utterly indefensible. As long as it prevails little progress can be hoped for. The Committee's characterization of it as unbusinesslike, improvident and not economic, is undeniably justified. In fact the report deals in such masterful fashion with the important phases of this subject that we print it in full on another page,

omitting only the appended tables and references. May a vigorous campaign ensue in the interest of the plan so commendably outlined and ably advocated in this report.

IN a recent letter to the *New York Times*, a correspondent employed in a branch of the building industry, where artistic feeling and ability might well form a part of necessary qualifications, asks: "Do employers value an employee who has educated himself in a way that gives to the employee a better knowledge of art, science and life in general than employees in his line of work generally have?" The question is a pertinent one and calls attention to a lamentable condition in the field of building to-day. We believe that the unfortunate truth of the matter is, there are but a comparatively few really competent artisans employed in building work. Whether this condition is the fault of the employer as intimated by the *Times'* correspondent who states, "To-day in my branch the men who are employed are those who are intensely practical, who can put up such quantities of work that the artistic side, as a matter of course, is almost neglected," or as the employer invariably maintains, when taken to task for inferior work, to his inability to secure the services of artisans, may not perhaps be definitely stated. Certain it is, however, that some of the most commendable designs are ruined by bad workmanship and misinterpretation of ornament that destroys both line and texture. The need of artisans and really skilled workmen in some branches of the building field is one of the most urgent of the day, and until the cause of their practical absence is overcome and they are again induced to take up their former vocations, there is small likelihood of our buildings equaling in artistic excellence those of the past, be the architect's conceptions ever so brilliant.

AMONG the many projects put forward to fittingly commemorate the one hundredth anniversary of the birth of Abraham Lincoln, there is none that appears to us nearly as suitable as that of erecting a great memorial building. As to its location there can be no very important differences of opinion. It should be erected in Washington overlooking the river and on the principal axis of the capitol and the monument, in accordance with the architectural scheme that provides for the reconstructed city. Its architecture should be unsurpassed by that of any building in America, and to that end no expense of either time or money can be spared and the greatest artistic talent procurable should be enlisted. The country has reached a stage in its development when it would appear well worth while to build one really great building that would compare with some of the architectural monuments of the Old World. Even to employ the plodding methods by which those old structures were reared would not be too great a price to pay, if they are necessary to the result. As compared with the senseless scheme of constructing a comparatively useless boulevard from Washington to Gettysburg, that has taken form in a bill introduced in the House of Representatives, or any other that has come to our notice, the plan for a Lincoln Memorial Building stands preeminent.

Current News

Book Notes

ENGLISH HOUSES AND GARDENS IN THE XVII AND XVIII CENTURIES. A Series of Bird's-eye Views by Kip, Badeslade, Harris and others. 91 plates, size 8 x 10. Price, \$6.00 net. New York: Charles Scribner's Sons; London: B. T. Batsford.

During the seventeenth and eighteenth centuries, social life in England probably reached its most stately and formal period. The manners and customs of the English people, whether at Court, at home or abroad, were ruled by the strictest formality. Even in the inner domestic life of the richer and titled people, the very exhibitions of the affections in the family circle appear to have been curbed by a formal code of rules.

It is therefore quite natural that all this should influence the character of the houses and the grounds that surround them.

The interesting series of illustrations that form this volume of English houses and gardens emphasize this striking characteristic of the English people of this period, and aside from the high artistic quality and splendid reproduction of the plates, presents a valuable opportunity for study.

The majority of the illustrations have been gathered from rare county histories, and books of views of the period. The result is a volume of convenient size, as attractive as it is instructive, and will, we believe, form an important addition to the artistic features of the architect's library.

THE MISTRESS OF ART. By Reginald Blomfield, A.R.A., M.A., F.S.A., etc. London: Edward Arnold. New York: Longmans, Green & Co. 300 pp., 5 x 7; full cloth. Price, \$1.40 net.

This work is the publication in one volume of a series of lectures addressed to students of the Royal Academy Schools.

The intent of these lectures is critical, rather than archæological, and the purpose has been most admirably effected.

The motive and line of argument employed are well summed up in the following sentence in the introductory paragraphs of the lecture on the Study of Architecture:

"Architecture, in these latter days, has become so complicated, it has sometimes strayed so far from the narrow track of art into the easier paths of financial enterprise, that its essence and justification as the serious art of building are in danger of being overlooked, and it is necessary to hark back again to earlier points of view."

We believe that the student of existing conditions in the field of architecture will concur in this admonitory expression. It really forms the text, the point of view for the lectures here printed, and a perusal of this volume will be found of particular value.

Following the initial lecture on the Point of View are

others treating of Design and Temperament, the Craftsman, Limitations of the Arts, the Grand Manner, Egypt and Greece and France. Of particular interest to the student are the lectures on Pergamos and Hellenistic Art and Rome.

There is nothing of the flavor of the text-book in this volume. The subject is presented in a graceful way, such as a well educated man, thoroughly a master of his topic, might impart in interesting conversation.

SMOLEY'S TABLES. Parallel tables of logarithms and squares, angles and logarithmic functions, corresponding to given levels, together with a complete set of five decimal logarithmic-trigonometric tables. For engineers, architects and students. By Constantine Smoley, C.E. Fifth revised edition; 328 + 125 pp., 5 x 7 inches; full flexible leather. Price, \$3.50 net. New York: Engineering News Publishing Co. London: Archibald Constable Co., Ltd.

In reviewing this valuable book of tables, now in its fifth edition, to those already familiar with its usefulness, it is not necessary to state anything further than the fact that these tables are presented in the same ready reference manner as in former editions, and that the present edition is a combination of the set of tables of the previous edition to which has been added a multiplication table for rivet spacing, and also a new set of logarithmic-trigonometric tables. We believe it is safe to state that these tables form an indispensable part of the professional man's library.

The structural draughtsman will find this work an invaluable assistant, as the most often recurring problems he has to meet and solve are handled by means of these tables with great saving of time and the small-est possibility of error.

THE BUILDING MECHANICS' READY REFERENCE: Plumbers, Steamfitters and Tinnners' Edition, by H. G. Ritchie, Superintendent of Construction, United States Public Buildings. 16mo. flexible cloth, 529 pp., 201 figures. Price, \$1.50 net. New York: John Wiley & Sons; London: Chapman & Hall, Ltd.

This is the fourth of a series of ready reference books, in pocket size and substantially bound, that are in utility and matter of text ready reference works in the broadest sense.

The volumes preceding the above work are: Carpenters and Woodworkers' edition, Stone and Brick Masons' edition, and Cement Workers and Plasterers' edition.

The author's wide field of practical experience in government construction fits him to fully anticipate and intelligently explain the often recurring questions of daily work. The mechanic, with the demands on his time for active effort, will, we feel sure, gladly avail of assistance that is both practical and accurate, and so easy of access.

Industrial

ROYAL VENTILATORS

Vitiated air is responsible for many ills. Not only does mankind suffer and make loud complaint, but our animal friends are sufferers but dumb ones, from the lack of pure air, so necessary to the making of good blood and the consequent insurance of good health.

The scientific study of best methods of exhausting foul air and insuring a sufficient quantity of pure, has engaged the attention of ventilator manufacturers for many years.

The Royal Ventilator & Manufacturing Co., of 415 Locust Street, Philadelphia, have issued an attractive illustrated pamphlet describing the results achieved by them during years of successful business history.

This pamphlet is of interest, as it deals with novel conditions to which their ventilators are particularly adapted. Dwellings and farm buildings, factories, train and wharf sheds, machine shops and roundhouses, school buildings and libraries, are all shown, by photographs, equipped with Royal Ventilators.

This motoring age is responsible for many new ideas, and an article in this catalogue, describing the successful placing of a Royal Ventilator on a large motor launch, will be read with much interest. When it becomes necessary to close the cabin, a canvas hose is attached to the lower end of the ventilating pipe, the lower end of the canvas being within an inch or two of the floor, just forward of the engine and in position to exhaust the explosive mixture as fast as it forms. With the rocking of the boat the canvas hose swings above the surface of the floor, thus, it is claimed, effectively picking up the dangerous gases.

It is further claimed that the construction of Royal Ventilators particularly fits them for the efficient performance of this work.

A NEW KIND OF DRAWER SLIDE

A new drawer slide which seems to be an improvement over the ordinary type heretofore in use, is being placed on the market by the Reliance Ball Bearing Door Hanger Company, of 1 Madison Avenue, New York.

It consists essentially of four grooved steel bars, two of which remain stationary, while the other two move between them on steel balls fitted into the grooves. The device is said to be strong, remarkably easy to operate and so simple it cannot get out of order. It is fitted to the bottom of the drawer in such a manner as to take up little room (may be attached to drawers not made especially for it), allows the drawer to be opened fully four-fifths of its length, and will not permit the drawer to bind at any point. It works so easily that a slight push applied at any point on the front end of the drawer will close it.

REINFORCING STEEL

At this time when so much work is being done with reinforced concrete, any advance that will cheapen the cost without sacrificing the efficiency or increasing the cost is welcomed by engineers.

In a little book, "Printed not Published," gotten out by the William B. Hough Company, Monadnock Block,

Chicago, they tell of "The Bar that Never Failed."

Reinforcing steel should have the highest elastic limit, greatest ductility and a mechanical bond sufficient to develop the strength of the steel. It is claimed by this company that their bar is nearer the ideal than any other so far brought out. In the making of this reinforcing, square bars of low carbon steel having an elastic limit of approximately 30,000 pounds and an ultimate strength of about 55,000 are twisted cold. By this process both the elastic limit and ultimate strength are increased; the elastic limit rising to between 55,000 pounds and 65,000 pounds. As the steel is low carbon in the first place and consequently ductile, there is no change in its ductility by the twisting. Furthermore, in the process of twisting cold any scale that is present will be broken off helping to make a better bond and any weaknesses in the bar will be shown up in uneven twisting. It is stated that the bars can be bent cold around their own diameter without showing signs of crack or break, which is a good indication of their ductility and ability to stand shock.

This material has been used in a number of recently built reinforced structures with good results.

HOT-WATER HEATING SYSTEMS.

The Stott Heating System Company, Monadnock Block, Chicago, Ill., has perfected a number of devices for attachment, either to existing or new hot-water heating systems, whereby it is claimed the efficiency is greatly increased.

The accelerator, they state, reduces the temperature and makes more dense the water in the expansion pipe, thereby producing enough resistance to hold the hot water in the heating system and giving better circulation until the heat is uniformly distributed.

The combined relief air pressure regulator and vacuum valve is said to allow the escape of air and steam which may accumulate in the pipes, boiler and radiators, when the system is being filled or while the water is being heated and affords a safety device in case the pressure rises too high. It is also intended to prevent a vacuum when the system is cooling or water is being drawn off.

The water flow regulator valves are designed to control the flow of water so that only a definite proportion of the water shall be allowed to pass through the radiators and the proportion is shown on an indicator.

For steam equipments an equalizer and separator is provided which, it is claimed, will prevent water escaping from a boiler with the steam.

Detailed information in regard to the appliances can be obtained by writing to the company.

SLABS.

A vest pocket booklet, published by the Northwestern Expanded Metal Company, Old Colony Building, Chicago, is one of undoubted interest and value to architects. It contains general information about placing reinforcement in concrete slabs, and their proper thickness based on present practice. It also contains numerous useful tables for making designs and estimates. This booklet will be sent to architects on application.

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